

# 1417

# **MASSACHUSETTS INSTITUTE OF TECHNOLOGY**

ONLINE CELEBRATION PROGRAM HONORING THE GRADUATES OF 2020 FRIDAY, MAY 29, 2020



# WELCOME

A warm welcome to MIT Commencement 2020! This year, in celebrating our graduates, we also honor their incredible courage and resilience in persevering through the disruption and disappointment of the past few months. And we extend our deepest thanks to their families and friends, whose love, inspiration, and encouragement carried our students to this important moment.

Today's graduates will join a global family of more than 141,000 MIT alumni around the world. Across time and across distance, MIT is a community held together by profound values: The ideals of excellence, integrity, meritocracy, and openness. A passion for solving tough problems. A commitment to take the high road. And a rare set of skills that can be applied in countless ways to serve the common good.

As we congratulate our new graduates on all they have accomplished, we dream of the wiser and kinder world they can help create.

L. Rafael Reif President

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# ORDER OF THE PROGRAM

# PRELUDE

*To The Light, To The Flame* composed by Jamshied Sharifi '83 conducted by Frederick E. Harris, Jr. performed by The MIT Wind Ensemble

# WELCOME Robert B. Millard '73 *Chairman, MIT Corporation*

INVOCATION Reverend Thea Keith-Lucas Episcopal Chaplain, MIT

**COMMENCEMENT ADDRESS** William H. McRaven US Navy Admiral, Retired Chancellor, University of Texas System, 2015–2018

**COMUSICA** Introduction by Eran Egozy '95 *Professor of the Practice, Music and Theater Arts, MIT* 

SALUTE Peter X. Su PhD '20 President, MIT Graduate Student Council 2018–2020

SALUTE AND TURNING OF THE CLASS RING Nwanacho Nwana '20 *President, MIT Class of 2020* 

# GREETINGS FROM THE INTERNATIONAL SPACE STATION

Christopher J. Cassidy SM '00 US Navy Captain Commander, Expedition 63

CHARGE TO THE GRADUATES AND CONFERRING OF DEGREES L. Rafael Reif President, MIT

SALUTE TO THE ADVANCED DEGREE RECIPIENTS Esther Duflo PhD '99 Abdul Latif Jameel Professor of Poverty Alleviation and Development Economics, MIT

CLOSING REMARKS Robert B. Millard '73 Chairman, MIT Corporation

SCHOOL SONG Chorallaries of MIT

TAKE ME BACK TO TECH MIT Community

WELCOME INTO THE MIT ALUMNI ASSOCIATION R. Erich Caulfield SM '01 PhD '06 President, MIT Alumni Association

# ONLINE

# DOWNLOADS

The MIT Parents Association invites you to celebrate the graduates of 2020 with its <u>DIY Commencement Party Kit</u>, including customizable party decorations, sing-along music and lyrics, a discount code to the COOP, and more.

# SOCIAL MEDIA

Tag your social media posts with #MIT2020. Connect on Twitter (@MIT, @MITCommencement, @MITStudents, @MIT\_Alumni), Instagram (MITpics, MITStudents, MITalumni), and Facebook (Facebook. com/MITnews, Facebook.com/ MITAA). Go to <u>socialmediahub.mit.edu</u> to experience the day through MIT social media accounts.

# INFINITE THANKS

To the speakers, musicians, hosts, planners, producers, and all who applied mind, hand, and heart to the creation of Commencement 2020. Credits, acknowledgments, and video from today's proceedings are available online: <u>commencement.mit.edu</u>

# IN MEMORIAM

Our friends are remembered with love by the Class of 2020

# Henoch Argaw

Henoch Argaw was born in Finland and raised in Colorado. Before coming to MIT, he was a recipient of the President's Award for Educational Excellence and served as a member of the College Board Advanced Placement Advisory Board, treasurer of the National Chinese Honor Society's Grandview Chapter, and vice president for Mu Alpha Theta.

At MIT, Henoch lived in East Campus and was majoring in Computer Science, Economics, and Data Science. A motivated self-learner, he found joy at an early age in teaching and mentoring others. Henoch—who spoke English, Amharic, Mandarin, and Arabic—developed several games and apps for Android, including flashcards in mathematics, Chinese, and Arabic. He also created an open-source code of the Lightning Network for private cryptocurrency transactions for the MIT Media Lab's Digital Currency Initiative.

Henoch was an officer for the MIT Club Sports Council, treasurer for the MIT Bitcoin Expo 2017 and the MIT Ethiopian-Eritrean Student Association, and participated in numerous activities that included the MIT International Science and Technology Initiatives program in Jordan, as well as the Tae Kwon Do, Bitcoin, and Skydiving Clubs. Known for his humble, gracious, and quiet spirit, Henoch loved to run track and to play trumpet, soccer, table tennis, chess, and poker. He passed away in the fall of 2017, during his second year at MIT, and his legacy lives on in the <u>Henoch Argaw Foundation</u>, which recognizes and supports academic excellence in science and technology.

# **Katherine Hunter**

Katherine Hunter was an active member of the MIT community—she touched the lives of many through her time on the MIT Women's Lightweight Crew team and as a member of the Cycling Club, Dance Troupe, and Sigma Kappa Sorority. Kate came to MIT with the hope to make the world a better place and she took on projects toward achieving this goal. One of these took place during the summer after her first year, when she worked on air pollution sensors for a rural community in Chile that relied on wood-burning stoves. She also participated in the MIT Undergraduate Research Opportunities Program, working for the Haystack Group in the Computer Science and Artificial Intelligence Laboratory on a project to develop tools to help new programmers.

Outside of her academics and extracurriculars, the communities and people in Kate's life were immensely important to her; her friends and family knew her to be strong, kind, and funny. Her inner fire shone in her passion for computer science, her commitment to excellence, and her warmth toward others. Kate lived a wonderful life and her memory inspires us as we take our own next steps.

# SCHOOL OF ARCHITECTURE AND PLANNING

# Bachelor of Science in Architecture

Course IV Department of Architecture

**Jackie Jia Qi Lin** Also with a Major in Course XI

#### Michelle A. Menkiti

Alicia L. Nimrick Minor in Materials Science and Engineering Minor in Computer Science

**Caroline Rosenzweig** 

Qicheng Zhao

# Bachelor of Science in Art and

Design Course IV-B Department of Architecture

Zidane Abubakar

**Jierui Fang** Minor in Computer Science Minor in Biomedical Engineering

Effie Jia Minor in Environment and Sustainability

# **Bachelor of Science in Planning**

Course XI Department of Urban Studies and Planning

#### Adriana Maria Jacobsen

**Noah Jefferson McDaniel** Minor in Economics

# Bachelor of Science in Urban Science and Planning with Computer Science Course XI-6 Department of Urban Studies and Planning

Meital Hadassa Hoffman

# Hadrian Merced Hernandez

# SCHOOL OF ENGINEERING

Bachelor of Science in Engineering as recommended by the Department of Civil and Environmental Engineering Course 1-ENG

Department of Civil and Environmental Engineering

**Foli Giovanni Amaizo** Minor in Computer Science

Darla Earl Minor in Urban Studies and Planning

Danielle F. Espinosa

Kebar Mosisa Geleta

Viban A. Gonzales Minor in Earth, Atmospheric, and Planetary Sciences

Zoe Nicole Lallas Minor in Urban Studies and Planning

Joseph R. Noszek Minor in Computer Science

Sierra Nicole Rosenzweig Minor in Business Analytics Minor in Theater Arts

Amy L. Vogel Minor in Urban Studies and Planning

Natalie Woods

Bachelor of Science in Mechanical Engineering Course II Department of Mechanical Engineering

John Ayooluwa Adeyeye

Alex Aguilar

Marwa AlAlawi

**Amro A. Alshareef** Minor in Computer Science

**Brandon A. Aranda Ocampo** Also with a Major in Course XXII-ENG Minor in Economics Nicolas Arons

Woonyong Bae

Michael A. Castillo Minor in Management (February, 2020)

Mateo Correa Aricapa

Neel K. Das

**Amy Q. Fang** Minor in Anthropology Minor in Design

Ryan Maximiliano Flores

Nicholas A. Fritzinger-Pittman

Johnny Z. Fung

Kiera A. Gavin

Albert P. Go

**Devon K. Goetz** Also with a Major in Course IX

Andrew H. Griese

Serena C. Grown-Haeberli

Mitchell L. Guillaume Minor in Computer Science

Henry M. S. Hanlon Minor in Energy Studies

Luke S. Hartnett Minor in Energy Studies

Katherine Ann Henshaw Also with a Major in Course XXI-M

**Iris Elizabeth Hwang** Minor in Computer Science

Ahmad Mujtaba Jebran Also with a Major in Course VI-2 Minor in Nuclear Science and Engineering

Caroline A. Jordan

Max I. Kessler

Chiaki Louise Kirby

Jeevesh Konuru

Margaret Ellen Kosten Also with a Major in Course XXI-M

Benjamin Kurzban

Serena Le

Cole C. Legg

Allison Lenhard Also with a Major in Course VI-2

Gabriel K. Li

Jennifer Lu

Mason R. Massie

Megan McCandless

Fiona L. McKellar

Melissa Anna Meloche

Lucy E. Milde Minor in Environment and Sustainability

**Elijah Ballard Miller** Also with a Major in Course XV-3

#### Harith Morgan

Valerie L. Muldoon Minor in Energy Studies

Erika P. Mynio

Jeremy R. Noel

Megan E. Ochalek

Sean M. Parks Also with a Major in Course VIII (February, 2020)

Ethan B. Perrin

Philip T. Phan

Anya R. Quenon Minor in Design

Yaseem Rana

Helen Elizabeth Read Also with a Major in Course XVIII

Jonathan A. Sampson Minor in Energy Studies Emily L. Sheng (February, 2020)

#### John Joseph Stampfli III

**Lisa Tang** Minor in Energy Studies

**Srimayi Tenali** Minor in Energy Studies

**Carson Isabella Tucker** Minor in Computer Science

**Daniel Tortora Wiest** Also with a Major in Course VI-2

Carolynn E. Will (February, 2020)

Qingmei Wu

Annie Tianci Zhang Also with a Major in Course IV-B

Kevin Zheng

Lyndie Lee Zollinger

# Bachelor of Science in Mechanical and Ocean Engineering Course II Department of Mechanical Engineering

Michelle Kornberg Minor in Music

Madison S. Pickett

**Emilio Ochoa Sison** Also with a Major in Course VI-2

Bachelor of Science in Engineering as recommended by the Department of Mechanical Engineering

Course II-A Department of Mechanical Engineering

Samer A. Awale Minor in Japanese

Yazan H. Ba'ara

Suji M. Balfe

Maxine D. Beeman Minor in Theater Arts

Sally Beiruti (February, 2020)

Emily A. Berzolla

**Federico Bescotti** Also with a Major in Course XV-1

**Steven C. Browne** Minor in Computer Science

Thi T. Bui

Samuel J. Cantrell Minor in Business Analytics

**Gabriela M. Carrión Rivera** Minor in Management

Hector A. Castillo

Loewen K. Cavill

Jiyoung Chang

Asia Chapman

**Claudia Joyce Chen** Also with a Major in Comparative Media Studies

Ali Rami Daher (February, 2020)

Naomi Dereje

Maxwell Joshua Drake

**Bouke K. Edskes** Minor in Physics

**Riley J. Ennis** Minor in Spanish

#### Gabriel A. Evans

#### Charlotte M. Folinus

**Joaquin Sergio Giraldo Laguna** Minor in Design

#### Danielle K. Gleason

**Remi A. Godinez** Also with a Major in Comparative Media Studies

#### Yi Gong

Benjamin R. Gray (February, 2020) **Jorge Alejandro Hernandez** (February, 2020)

Raudel Hernandez, Jr.

Nathaniel James Huffman

Valerie Beth Hunter

Samuel H. Ihns

Alden T. James Also with a Major in Course XXI

**Caitlin L. Keegan** Minor in Economics Minor in Business Analytics

Jameson Clark Kief Minor in Brain and Cognitive Sciences

S. Violet Killy

Zachary Alexander Kopstein

**Dheekshita Kumar** Also with a Major in Course VI-2

Cécile Marie-Josée Leclerc Minor in Biomedical Engineering

Alyssa Li Minor in Design

Laura Yun Li Minor in Design

Weishan Liao

**Isabelle Y. Liu** Also with a Major in Course VI-1

Mateo Mariscal

Karla Sofía Martínez Román

#### Elise McCormack-Kuhman

Lance D. Neil, Jr. Also with a Major in Course VIII

**Heather Marie Nelson** Minor in Design

Thomas R. Nelson

Alexandrine Obrand

Rana E. Odabas

Rachel M. O'Grady

Katharine Pan Minor in Management Serena Pan Minor in Science, Technology, and Society (September, 2019)

#### **Alexander Rajan Patton**

#### **Elizabeth Marie Barna Pedlow**

**Isaac S. Perper** Also with a Major in Course VI-2 Minor in Economics

Francisco A. Pineda

Felipe Radovitzky

Matthew J. Reeve

Alvaro Rivera

John Farrar Robertson Minor in Management

Kevin T. Rodriguez (February, 2020)

George Imre F. Roudebush (February, 2020)

Abenezer Samuel

**Booker B. Schelhaas** Minor in Spanish

**Israel J. Sosa** Minor in History

**Dorothy Szymkiewicz** 

**Daniel A. Taylor** Also with a Major in Course XIV-1

Benjamin R. Teitscheid

**Gustavo F. Torres** 

**Claire M. Traweek** Minor in Russian and Eurasian Studies

Raymond S. Tse

**Ana María Vargas** Minor in Literature (February, 2020)

Sandra L. Walter Minor in Music

**Tessa Nicole Weiss** 

Olivia J. Yao

# Bachelor of Science in<br/>Materials Science and<br/>EngineeringCourse III<br/>Department of Materials Science<br/>and Engineering

**Bilal Azhar** Also with a Major in Course VIII

Maya Rebekah Berlinger

**Gloria Un Chyr** Minor in Japanese

**Kyle Pearce Dominguez** Minor in Mechanical Engineering

**Claire E. Halloran** Minor in Public Policy Minor in Energy Studies

Maia H. Hannahs Minor in Physics

**Carolyn K. Jons** Minor in Chinese

**Talia M. Khan** Also with a Major in Course XXI-M

Omar A. Laris

Cíara Renee Mulcahy

Babatunde O. Ogunlade

**Seeta Salgia Patel** Minor in Economics Minor in Energy Studies

Pooja Donthi Reddy

**Caleb Richardson** 

Kevin Alfredo Santillan Hernandez

**Cindy H. Shi** Minor in Polymers and Soft Matter

Vivian Song

Sara Laura Wilson

Michelle Wist

# Bachelor of Science as recommended by the Department of Materials Science and Engineering Course III-A

Department of Materials Science and Engineering

Anthony Lu Cheng Minor in Computer Science Minor in Energy Studies

Yi Jung Choi Minor in Political Science

Megan E. Diehl

**Connor Dotson** Minor in Finance

Yiran S. He Also with a Major in Sci., Tech., & Society

Sofia A. Lobo Kemp Minor in Management

Isaac W. Metcalf Also with a Major in Course VIII

**Thomas Eismann Urquhart** Minor in Public Policy

Hilary Sophia Vogelbaum

# **Bachelor of Science in Electrical**

<u>Science and Engineering</u> Course VI-1 Department of Electrical Engineering and Computer Science

Roderick Sterndale Bayliss III (February, 2020)

**Timothy Justin Cardona** Also with a Major in Course VIII

**Benjamin Gus Cary** 

Ryan J. Catalano

Rhian A. Chavez Minor in Physics

Michael D. DeTienne (February, 2020)

Adam B. Estes Minor in Ancient and Medieval Studies

**Emmanuel Havugimana** 

Savannah N. Inglin

David Mejorado III

Yukimi Morimoto

**Elizabeth Katherine Murray** Minor in Applied International Studies

Suzanne O'Meara (See also M.Eng., Course VI-P)

Alexander D. Reduker

**Jeremy C. Sogo** Also with a Major in Course XXI-M

Elijah B. Stanger-Jones

#### Bachelor of Science in Electrical Engineering and Computer Science

Course VI-2 Department of Electrical Engineering and Computer Science

Vibha Agarwal Minor in Biomedical Engineering

Elaheh Ahmadi

Harrison M. Allen

Kika A. Arias

Katharine E. Bacher

Matthew J. Beveridge Also with a Major in Course XVIII Minor in Theater Arts

Eric P. Boehlke

Andrea A. Bolivar Matos

Akhilan Boopathy

**Connor P. Bradley** 

**Alexis Camacho** 

Wei Chen (February, 2020)

Samuel C. Cherna

Peter B. Crocker

Jiaming Cui

**Shiloh Serenity Sigrid Curtis** 

#### Miles J. Dai

Gian C. Delfin

Alexander Dimitrakakis Also with a Major in Course XVIII Minor in Economics

**Anis M. Ehsani** Minor in Mathematics

#### Mahalaxmi Elango

Yu Liang Fang Also with a Major in Course XVIII Minor in Economics

**Jini A. Gabbidon** Minor in Music (February, 2020)

#### Daniel G. Gonzalez Cunningham

Alexander G. Grossman (See also M.Eng., Course VI-P)

Benjamin D. Gutierrez Minor in Mechanical Engineering Minor in Mathematics (February, 2020)

#### Chessa N. Hoekstra

Kayla A. Holman Minor in Mechanical Engineering

Eva H. Hu

Angel Huang

Ruixue Louisa Huang

Vivian Huang

Nada Hussein

Yow Shiuan Hwang Minor in Energy Studies

Alexa L. Jan Minor in Spanish

#### Mumin Jin

**Sule Kahraman** Minor in Statistics and Data Science

Natnael K. Kahssay

**Wonjune Kang** Minor in Economics Minor in Mathematics

#### Tamer Karatekin

Sean J. Kent

Quang Phuc N. Kieu

Grayson C. King Also with a Major in Course VIII

Alon Z. Kosowsky-Sachs

Paula Lahera (February, 2020)

Ronit N. Langer Minor in Public Policy (February, 2020)

Lukas C. Lao Beyer (February, 2020)

**Pavle Lazarević** Also with a Major in Course XVIII Minor in Economics

Lesian E. Lengare

**Dylan Robert Lewis** 

Jenny Li

**Po-Han Lin** Also with a Major in Course XX Minor in Biology Minor in Finance

**Patricia J. Lu** Minor in Statistics and Data Science

Kara F. Luo Also with a Major in Course XVIII (February, 2020)

#### Gabriel A. Madonna

**Chenkai Mao** Also with a Major in Course VIII Minor in Mathematics Minor in Music

Dylan J. Marlborough

Shana Mathew

#### Francis E. McCann Ramirez

Haripriya P. Mehta Minor in Music (See also M.Eng., Course VI-P)

Michele Q. Miao

Daniel R. Monagle

David Morejon Minor in Economics Tyler Lawrence Moroso

Noah F. Moroze

Andre J. Mroz

Joshua Eron Noel

Ian A. Palmer

**Shannon S. Peng** Minor in Theater Arts

**Emanuel Perez** 

Ignacio Perez Bedoya Also with a Major in Course VIII Minor in Mathematics Minor in Music (See also M.Eng., Course VI-P)

Ashisha N. Persad

Phoebe K. Piercy

Zachary J. Pitcher

Jacob W. Pritzker

Jessica A. Quaye

**Ravi Rahman** Minor in Mathematics Minor in Management

Raja William Rajčić

Kavya Ravichandran (See also M.Eng., Course VI-P)

**Sushrutha P. Reddy** Minor in Physics Minor in Mathematics

Premila Ann Rowles

Benjamin G. Rowley

Jonathan Samayoa

**Ryan M. Sander** Also with a Major in Course XIV-2

Jeba Sania Minor in Brain and Cognitive Sciences

Kristin Marie Sheridan Minor in Spanish

Ryan M. Shubert

Tanya N. Smith Minor in Japanese

Máiréad M. Solvang

Logan S. Stafford

Sophia E. Struckman

Lydia Y. Sun

Virginia Sun

Jade N. Talley

Luis Terrones-Verástegui

Luis Edgardo Torres Rodríguez

**Peter T. Tran** Also with a Major in Course VIII

Elizabeth A. Truchan

Matthew C. Tung

Samuel Lee Ubellacker Minor in Mechanical Engineering

Francisca Vasconcelos Also with a Major in Course VIII

Julie Renee Vaughn Minor in Biomedical Engineering

Héctor Javier Vázquez Martínez

Benjamin T. Wang

Yi Wang

Ethan J. Weber

Quentin Wellens

Daniel A. Whatley

Martin T. Winton

Daniel R. Wrafter Minor in Mathematics (February, 2020)

Priscilla Joy Wu

Byron L. Xu

Adil Yusuf

**Catherine Yue Zeng** 

Franklin Zhang Minor in Mechanical Engineering

# Bachelor of Science in Computer Science and Engineering Course VI-3 Department of Electrical Engineering and Computer Science

#### Marwa Abdulhai

Madeline L. Abrahams Minor in Women's and Gender Studies

Kenneth Kofi-Abaka Acquah Also with a Major in Course XIV-2

Katherine Elizabeth Adams

Shahul Alam Minor in Mathematics

Max G. Allen II

**Alhamzah S. Alnufaili** Minor in Mathematics

Christian Omar Altamirano Modesto Also with a Major in Course XVIII

Angel G. Alvarez II

**David James Amirault** Also with a Major in Course XVIII (See also M.Eng., Course VI-P)

Andrew R. Antonitis

Md Sanzeed Anwar Minor in Mathematics

Ersin Arioglu Minor in Economics

Michael Christopher Arrington

Lily Sierra Bailey

Jamarber Bakalli Also with a Major in Course XXI-W

**Cole S. Baker** Minor in Brain and Cognitive Sciences

**Brandon J. Baraban** Minor in Mathematics Minor in Music (See also M.Eng., Course VI-P)

Damian S. Barabonkov

Avital Franka Baral Also with a Major in Course XI

**Remy Bassett-Audain** 

**David A. Bau IV** Also with a Major in Course XVIII

Keis Bejgo

Eden Bensaid Minor in Mathematics

#### Jackson R. Bernatchez

Mateus Bezrutchka Also with a Major in Course XVIII (February, 2020)

Ramakrishnamurthi Bhaskaramurthi (September, 2019)

**Darian Bhathena** Minor in Biomedical Engineering

Darius A. Bopp

Luke R. Bordonaro

**Eric Mahathvan Bradford** (February, 2020)

Cameron R. Burnett

**Emily Y. Cai** Also with a Major in Course XVIII

Lujing Cen Minor in Mathematics

**Rishabh U. Chandra** Minor in Political Science Minor in Statistics and Data Science

Hannah Y. Chang

Andrew L. Chen

**Baian** Chen

Kevin Chen Minor in Economics

Melanie Ronghsuan Chen Minor in Mathematics

Leon Cheng

Victor Bo-Wei Cheng

Rowan T. Cheung

Rayden Yongxiang Chia (February, 2020)

Seri Choi

Won Suk Choi

Jeff T. Chow

Jakub Chudik

Raven Arrow H. Clayborn

Joanna Kim Cohen

Jeremy Charles Cowham

Van R. Coykendall

Robert C. DeLaus

Andrew Thomas Delgadillo

Alenta Demissew Minor in Mathematics Minor in Music

#### Kenneth A. Derek

Maurizio Alfredo Diaz

**Tony Ding** 

Serena N. Do Minor in Music

Shannon E. Duffy Minor in Music

**Murielle Dunand** 

Ramya A. Durvasula Also with a Major in Course XVIII

Joshua A. Elbahrawy

**Jonathan E. Esteban Díaz** (February, 2020)

Andrés Fábrega Gerbaud Minor in Mathematics

Amir Farhat

Selena C. Feng

Juan Angelo Ferrúa Elmúdesi Also with a Major in Course XV-1

Julia M. Fiksinski Minor in Music

Diana J. Flores

Nathan Foss Minor in Mathematics

Sanjay Ganeshan

**Jiyang Gao** Also with a Major in Course XVIII Minor in Japanese Juan Carlos Garcia Also with a Major in Course XXI-M (February, 2020)

Rene A. Garcia

Bamlak Gessessew Minor in Political Science

Yianni Giannaris

Julian R. Gomez

Nicolás Gómez del Campo

**Linda Zhiya Gong** Minor in Mathematics

Armaan V. Gori

Rachel A. Green

**Taylor Anne Grey** 

Jada Rosaria Griffith Minor in Theater Arts

John Michael Grosen Minor in Mathematics

Katharina Valentina Gschwind

Ishaan Gulrajani

Adam Robert Gumbardo

Daniel Guo Also with a Major in Course XVIII (February, 2020)

Xiaolu Guo

Arjun R. Gupta (See also M.Eng., Course VI-P)

**Deepankar Gupta** Also with a Major in Course XVIII

Jasper F. Haag

Jonathan S. Harvey Buschel (February, 2020)

Helen M. He

Joshua Ryan Hilke

Cole R. Hoffer

Zachary Nolan Holbrook Minor in Economics Minor in Mathematics (February, 2020)

Daniel I. Hong

Claire C. Hsu

Emily D. Hu Minor in Music

**Stephanie M. Hu** Also with a Major in Course IX

Matthew S. Hutchinson Minor in Political Science (See also M.Eng., Course VI-P)

Andrea Jessica Jaba

Satvat Jagwani Minor in Mathematics

Shreyan Jain Minor in Literature (See also M.Eng., Course VI-P)

Soo Jung Jang

#### Nicholas William Janovetz

**Roger Shi Jin** Also with a Major in Course XVIII Minor in Biology

**Benjamin S. Johnson** Minor in Writing

Cory M. Johnson (February, 2020)

**Ivan C. Jutamulia** Minor in Statistics and Data Science

Nicolaas M. Kaashoek

Endrias K. Kahssay

Michael L. Kaminsky

Shreyas Kapur

Sai Veda Pramoda Karnati Minor in Biomedical Engineering

Madlyn H. Kates Minor in Art, Culture and Technology

Dain Kim

Jeffrey Ji-Ho Kim

**Spencer Michael Kim** (February, 2020)

Joonho Ko

Elorm Kofi Koto (February, 2020) **Tim Kralj** Minor in Philosophy

Vedaant Paul Kukadia

Michael A. Kulinski

Agni Kumar Also with a Major in Course XVIII Minor in Economics (See also M.Eng., Course VI-P)

Grace Sally Lam

Jason Lam Also with a Major in Course XV-1 (See also M.Eng., Course VI-P)

**Avery B. Lamp** Also with a Major in Course XV-1

Allen J. Lee (September, 2019)

**Jinny Lee** Minor in Japanese

Madison H. Lee

Ariel Skye Levy Minor in Mathematics

Amanda D. Li (February, 2020)

#### Helen Li

Jeffrey Z. Li (September, 2019)

#### Lawrence L. Li

Lucy Li

Wilbur Yone Li Minor in Mechanical Engineering

Yanlin Li Minor in History

Kun Lin

#### Xu Lin

**Sonja Camilla Lindberg** Minor in French

**Cynthia Tianqing Liu** Also with a Major in Course XVIII

Jessica Liu

Nanxi Liu

Tara Liu Also with a Major in Comparative Media Studies

Ricardo A. Lopez (February, 2020)

Sophia Y. Luo Also with a Major in Course XIV-2 (See also M.Eng., Course VI-P)

Cory J. Lynch Minor in Japanese

Cowboy R. Lynk

Kevin A. Lyons

Shane H. Lyons

Jingwei Ma

Creshendo A. Maccow Minor in Management

Loren Rose Maggiore Minor in Mechanical Engineering

**Emily Marie Malison** 

**Christopher Glendon Matthew Mauck** 

James E. McGaa Minor in Mathematics

Jasmine C. McGhee (February, 2020)

Jocelyn C. McGhee (February, 2020)

Albert N. Menio

Enrico Joseph Micali

Tyler J. Millis

**Felipe Monsalve** Also with a Major in Course XIV-2

Jack S. Moore Minor in Music

#### **Christian Thomas Moroney**

Sanjeev R. Murty Also with a Major in Course XVIII

Urmi Mustafi

Moin Nadeem (February, 2020)

Ramya Nagarajan

Molly M. Nagele (February, 2020)

Audace Nakeshimana Minor in Economics

**Ajinkya Kishore Nene** (See also M.Eng., Course VI-P)

Diana Nguyen

Trân Bảo Nguyễn

Juan M. Ochoa Ortiz Minor in Mathematics

Adelaide Robyn Oh Also with a Major in Course XVII

Santiago Ospina

**Simran K. Pabla** Minor in Mathematics

**Gregory M. Pailet** Minor in Mathematics

**Tiffany E. Pan** (February, 2020)

**Russell Anthony Ramos Pasetes** Also with a Major in Course XXI-M

#### Sheel V. Patel

#### McCoy A. Patiño Middaugh

**DaMarcus D. Patterson** Also with a Major in Course XVIII

Jason G. Paulos (See also M.Eng., Course VI-P)

Srijith Sreekumar Poduval (See also M.Eng., Course VI-P)

#### Lilia Poteat

**Collin L. Potts** Also with a Major in Course XVIII

Arul Ray Prasad Also with a Major in Course XVIII

Neha Prasad Also with a Major in Course XVIII

**Tiancheng Qin** Also with a Major in Course XVIII Minor in Music

Sunayana Rane (See also M.Eng., Course VI-P)

**Christopher James Reilly** 

Anthony J. Rice

Yaateh H. Richardson Minor in Music

Humberto Riverón Valdés

Nicolas H. Rodriguez

Xavier Roman

Isak Romero

**Brennan H. Rosales** 

Linnea J. Rylander

**Roshni Sahoo** Also with a Major in Course XVIII Minor in Literature

#### Steven G. Salvas

#### Brent C. Samuels

Nilai M. Sarda Minor in Mathematics (See also M.Eng., Course VI-P)

Sarbari Sarkar Minor in Statistics and Data Science (See also M.Eng., Course VI-P)

Lauren Schexnayder Also with a Major in Course IX Minor in Music

Gabriel Joseph Schneider

**Theodoros Sechopoulos** Minor in Mathematics

Jason Lee Seibel

Kliment Serafimov

Vlad Şeremet

Karunya Anantha Sethuraman

**Rishi Nilesh Shah** Minor in Brain and Cognitive Sciences Minor in Political Science

**Ellen Victoria Shea** Minor in Japanese

Sean Shi

Luke Shimanuki Also with a Major in Course IX Minor in Mathematics (See also M.Eng., Course VI-P) **Oleksandr Shumaiev** Also with a Major in Course VIII Minor in Mathematics Minor in Statistics and Data Science

Michael Sol Silver

Sanja Simonovikj

Prachi Sinha

Arlene Elizabeth Siswanto Minor in Mathematics

Christabel J. Sitienei (February, 2020)

Cel Andromeda Skeggs

Christine Soh Also with a Major in Course XXIV-2

Anna L. Song

**Trevor Spreadbury** Minor in Mathematics

Aditi H. Srinivasan

Colton G. Stearns

Patroklos N. Stefanou

Mariia Stepaniuk

Rex A. Stockham II

Aramis A. Subee

**Daniel Xu-Feng Sun** Also with a Major in Course XVIII

#### Kevin Sun

Rishi S. Sundaresan (See also M.Eng., Course VI-P)

Arman J. Talkar

Michelle Tan Minor in Music

Kentaro Tanaka (February, 2020)

Ayobamidale T. Taylor

Nicole Dawson Thumma

Sunny Tian (See also M.Eng., Course VI-P)

Steven R. Timberman

Charles S. Tonneslan

Madelyn E. Torres

Carlos D. Treviño

Andy Tso Minor in Statistics and Data Science

**Tenzin S. Ukyab** Minor in Philosophy

Prithvi N. Undavalli

Mayukha Suhasini Vadari

Abhiti G. Vaish Minor in Economics

Miguel Vega

**Rohil Verma** 

Stuti Vishwabhan

Suchan Vivatsethachai Also with a Major in Course XVIII Minor in Statistics and Data Science (February, 2020)

#### Robert Mugisha Vunabandi

Annie Wagner (February, 2020)

Austin Taylor Wang (See also M.Eng., Course VI-P)

Brice Libai Wang

**Charleen Wang** 

**Crystal Wang** Minor in Mathematics

Daniel A. Wang

Meryl S. Wang

**Rose Elizabeth Wang** 

Xiaoyi Wang Minor in Economics Minor in Mathematics

Yingni Wang Also with a Major in Course XVIII Minor in Finance

#### Chase Jervis Joseph Warren

Mattie F. Wasiak (See also M.Eng., Course VI-P)

Ryan L. Welch (February, 2020) Erica X. Weng

Jesse Alan Widner

Christien S. Williams

Matthew E. Woicik

**Eyob W. Woldeghebriel** Minor in Brain and Cognitive Sciences

**Priscilla Y. Wong** (February, 2020)

#### Alice Selina Wu

Julia Wu (February, 2020)

Nanette Wu Also with a Major in Course XXI-M

Justin Hu Xiang Minor in Finance

Brian B. Xie

Adela Y. Yang Also with a Major in Course XVIII

Alexander Y. Yang

Katherine Shulin Yang Minor in Comparative Media Studies

Stella Lan Yang (February, 2020)

Su Yang

#### **Tiffany Yang**

**Yejin You** Also with a Major in Course XVIII

**Yuancheng Yu** Also with a Major in Course XVIII

**Dillon Zhang** Minor in Theater Arts

#### **Elaine Zhang**

**Emily T. Zhang** Minor in Mechanical Engineering

Madeline Manlin Zhang (February, 2020)

#### **Ruowang Zhang**

Zhaoyuan Zhang (February, 2020) **Tianlin Zheng** Minor in Finance

#### Jessica F. Zhu

**Yunyi Zhu** Minor in Design

Yuqing Zhu Also with a Major in Course XVIII Minor in Economics

# Bachelor of Science in Computer Science and Molecular Biology Course VI-7

Department of Electrical Engineering and Computer Science

**Emma A. Bernstein** Minor in Ancient and Medieval Studies

Kristy Amé Carpenter

Joshua T. Derrick Also with a Major in Course XXI-W

#### Camille X. Devoe

**Barış Can Ekim** Also with a Major in Course XVIII

**Karen Gu** Minor in Linguistics Minor in Statistics and Data Science

#### Fatima M. Gunter-Rahman

#### Kendyll Nicole Hicks

#### Eileen Hu

Sam Seunghun Lee (February, 2020)

Aman S. Patel Minor in Statistics and Data Science (February, 2020)

#### William Phu

Montana F. Reilly Minor in Literature

**Venkatesh S. Sivaraman** Minor in Music

**Cassia Bethany Wang** Minor in Music Lawrence C. Wong Minor in Statistics and Data Science

Kelly Zhang Minor in Music

# Bachelor of Science in Computation and Cognition

Course VI-9 Department of Electrical Engineering and Computer Science

Melat R. Anteneh

Mariana Gomez del Campo

Hang Le Thi Nguyet

Steven C. Speck

#### Bachelor of Science in Computer Science, Economics, and Data Science Course VI-14

Department of Electrical Engineering and Computer Science

Sarah Racquel Antiles Minor in Finance

#### Ariel Brito

**Julia Castiglia** Minor in Business Analytics

**Amanuael Gebregziabhere Gidey** Minor in Business Analytics

**Benjamin Philip Gruber** 

Tianyun Gu

**Emily Minsoh Kim** 

**Stephanie D. Li** Minor in Music

**Elton Lin** Minor in Mathematics

Thee Ngamsangrat

Adedoyin Adenike Abimbola Olateru-Olagbegi

Veronica J. Ripper

Albert D. Roberts III

Maya Leung Roy Minor in Mathematics

**Cindy Wenhui Si** Minor in Anthropology

Lilia R. Staszel

Kenny JH Yang

# Bachelor of Science in Chemical Engineering

Course X Department of Chemical Engineering

James Cao

#### **Connor Chung**

#### Juan Sebastian Esquivel Gutierrez

**Michal L. Gala** Minor in Computer Science

**Conrad E. Goffinet** Minor in Economics Minor in Computer Science

Kristina Anne Greenwood

Kaitlyn Arminda Hennacy

**Kedi Hu** Also with a Major in Course IV

Kaleigh Elizabeth Hunt Also with a Major in Course XXI-G

Kyle B. C. James

#### Mofoluwaso S. Jebutu

Kelvin Kyle Jones Minor in Economics

Hannah J. Loizzo Minor in French

Ziad Mansour Also with a Major in Course XVIII

Jennifer Chibuanuri Nwenyi Minor in Materials Science and Engineering

Watchara Pep Ouysinprasert Minor in Finance

**Crystal Pham** Minor in Business Analytics **Christian Antonio Sanchez** (February, 2020)

**Daniel Shipchandler** (February, 2020)

**David Linwood Silverstein** Minor in Economics

Philip Khiem Tran

Johan Steven Villanueva Gutierrez

**Junyu Yang** Also with a Major in Course V

**Liruonong Zhang** Minor in Management

## Bachelor of Science in Chemical-Biological Engineering

Course X-B Department of Chemical Engineering

Jenna K. Ahn Minor in Computer Science

**Delaney Marie Burns** Also with a Major in Course VII

Cindy Chen

Xingyu Chen

**Dana B. Dabbousi** Minor in Biology Minor in Entrepreneurship & Innovation

**Samantha Johanna Fletcher** Minor in Literature

Fernando A. Juarez

David A. Poberejsky Also with a Major in Course VI-7

**Gianna Yvonne Reza-Ortega** Also with a Major in Course VII

Audrey Beth Ricks

**Crystal Y. Tsui** Also with a Major in Course VII

# Bachelor of Science in Engineering as recommended by the Department of Chemical Engineering Course X-ENG

Department of Chemical Engineering

Jordan L. Alford Also with a Major in Course XXI-G

Nathanael Assefa Also with a Major in Course XVIII Minor in Literature

Ashton St. Clair Dacon Minor in Computer Science

Stephen Anderson Duncan

**Anjolaoluwa Adebola Fayemi** Minor in Theater Arts

Julia L. Pallone

Elyse A. Paneral

# Bachelor of Science in

<u>Aerospace Engineering</u> Course XVI Department of Aeronautics and Astronautics

#### Marcus Salvatore Abate

Samuel Patrick Austin

Brent Alberto Avery Minor in Economics

**Mary Katherine Brewer** Minor in History

Humberto L. Caldelas II

Matthew C. Campbell Minor in Japanese

Kevin C. Carlson Minor in Political Science

Kathleen M. Clark

Jakob Edward Coray

Mary Dahl Minor in Writing Jad A. Elmourad Also with a Major in Course VIII Minor in Theater Arts

**Thomas Edward Finn** 

Alexandra Mae Forsey-Smerek

**Aigneis Ambrose Frey** 

Carlos Rafael Garcia (February, 2020)

Madeline K. Garcia

**Timothy J. Glinski** Minor in Japanese

Sarah Margaret Gonzalez Minor in Literature

Kelton C. Hardrict, Jr.

**Timmy A. Hussain** Minor in Management

#### Jim Matthew Koldada

**Raul Alexander Largaespada** Also with a Major in Course VI-2

**Mia J. LaRocca** Minor in Music

Jonathan Edwards Ledet

**David Raymond Mueller** Also with a Major in Course VI-2 (February, 2020)

#### Ethan T. Munden

Alexander I. Peraire-Bueno Also with a Major in Course VI-2

**Daniel Nathan Pickard** Minor in Mathematics

**Thomas S. Rick** Minor in Political Science

William Beau Rideout (September, 2019)

**Felipe Roz Barscevicius** 

Tina Tran

Michelle Xu Minor in Japanese

José Miguel Zavala González

Bachelor of Science in Engineering as recommended by the Department of Aeronautics and Astronautics Course XVI-ENG Department of Aeronautics and Astronautics

TojumiOluwa Sijibomi Adegboyega

Nicholas L. Bain

Diego Nicolas Barea

Alex Chat Tung Choi

Hunter Stan Fields Minor in Economics Minor in Finance

Sean A.J. Gloumeau

**Christopher L. Hughes** Also with a Major in Course VI-2

**Abigail J. Lee** Minor in Computer Science

Jacqueline F. Liao Minor in Computer Science

**Gabriel B. Margolis** Also with a Major in Course VI-2

Claire M. McGinnity

**Kyle Jared Morgenstein** Also with a Major in Course XII

Mohammed N. Nasir

Juan Alejandro Salazar Also with a Major in Course VI-1

Ryan Riley Scerbo

Madeleine R. Schroeder

Tesla Wells

Joanna A. Zhang

Bachelor of Science in Biological Engineering Course XX Department of Biological Engineering

Masrur S. Alam

Andres D. Alvarado Minor in Japanese

Andrés Álvarez Minor in Business Analytics

**Adrianna E. Amaro** Minor in Theater Arts

**Christina K. Bray** Minor in Literature

**Shin Chang** Minor in Music Minor in Design

Sharon J. Chen Minor in Economics (February, 2020)

**Rebekah M. Costello** Minor in Political Science

Izumi C. de los Rios Kobara

**Linyue Fan** Minor in Computer Science

Joseph S. Faraguna

Andrea Garmilla

**Ning Guan** Minor in Economics Minor in Mathematics

**Ayse Angela M Guvenilir** Minor in Writing

Aya Grace Halawi

**Bárbarah Cavalcanti Heimer** Minor in Computer Science

**Shea Annelise Landeene** Minor in Brain and Cognitive Sciences

Alice Lin Also with a Major in Course IX

Leanne Lin Minor in Mathematics

Sally Liu

Abigail V. McGee

Marissa L. McPhillips Minor in Writing

**Jenna Bryn Melanson** Minor in Literature

Santiago Munoz Perez

Nia O. Myrie

Domenic N. Narducci

**Cathy Phan Nguyen** Minor in Spanish

**Benjamin J. Oberlton** 

Athena I. Ortega

Kristen Elizabeth Overly

Cecilia Padilla

Julia L. Pei

Giselle A. Peng

Zion Ruth Perry

William B. Pinney III

**Imon Rahaman** Minor in Mathematics

Divya Ravinder

**Emily S. Ryeom** 

Michelle N. Sanchez

Natasha Marie Stark

Yotaro Sueoka Also with a Major in Course IX Minor in Physics Minor in Computer Science

#### Melody C. Tan

**Steven D. Truong** Also with a Major in Course XXI-W

Kayla Nicole Vodehnal Minor in Brain and Cognitive Sciences

#### Nina Wang

Alexandra Elizabeth Werner Minor in Science, Technology, and Society

Cydney Alexandra Wong Minor in Women's and Gender Studies

Nova Xu Minor in Music

Yue Zhong

#### Bachelor of Science in Nuclear Science and Engineering

Course XXII Department of Nuclear Science and Engineering

**Alexandru D. Calburean** (February, 2020)

Eva Morgan Lisowski

Warner A. McGhee Minor in Mechanical Engineering

Jacob N. Miske Also with a Major in Course II-A Minor in Energy Studies

**Thomas John Strei III** Minor in Public Policy

# Bachelor of Science in Engineering as recommended by the Department of Nuclear Science and Engineering Course XXII-ENG

Department of Nuclear Science and Engineering

**Colt S. Hermesch** Minor in Economics

**Benjamin R. Sheffer** Also with a Major in Course VIII

# SCHOOL OF HUMANITIES, ARTS, AND SOCIAL SCIENCES

**Bachelor of Science in** Economics

Course XIV-1 Department of Economics

Michelle A. Bai Also with a Major in Course XVII Minor in Energy Studies

Hanna W. Kherzai Minor in Writing

Sydney A. LaPorte

**Ignacio Ortega Castineiras** Minor in Mechanical Engineering Minor in Energy Studies

**Spencer D. Pantoja** Also with a Major in Course XVIII

Jack Philip Abraham Spira

Hin Nok Oscar Suen

# Bachelor of Science in

Mathematical Economics Course XIV-2 Department of Economics

**Tina Pavlovich** Minor in Spanish (February, 2020)

# Bachelor of Science in Political Science Course XVII Department of Political Science

**Frances Caroline Parker-Hale** Minor in Biology

Sarah Benette Powazek (February, 2020)

Kaitlin Aria Tucci Also with a Major in Course XV-1 Bachelor of Science in Anthropology Course XXI-A Program in Anthropology

Kayla A. Tabb

Bachelor of Science in Global Studies and Languages Course XXI-G Global Studies and Languages

Sarah Margaret Owen

**Bachelor of Science in Writing** Course XXI-W *Program in Writing and Humanistic Studies* 

Hannah Michaye Ledford

### **Bachelor of Science in** Humanities and Engineering Course XXI-E

Department of Humanities

Allan Gelman

Danny Gelman

Emily Elliott Grey

Rachel N. Groberman

Robert C. Henning

Katherine Gar-Ling Yee

# Bachelor of Science in

Humanities and Science Course XXI-S Department of Humanities

Karina I. Hinojosa

Jamison Rich

# **Bachelor of Science in**

<u>Philosophy</u> Course XXIV-1 Department of Linguistics and Philosophy

Brian C. Bates

Joseph D. Edwards

Matisse Catherine Peppet Also with a Major in Course XVIII

# Bachelor of Science in

Linguistics and Philosophy Course XXIV-2 Department of Linguistics and Philosophy

Margarita Misirpashayeva Also with a Major in Course XVIII-C

# **Bachelor of Science in**

<u>Comparative Media Studies</u> Program in Comparative Media Studies

**Joanna J. Gerr** Also with a Major in Course VI-3

**Anthony Hernandez** Also with a Major in Course VI-3

**Brianna E. Igbinosun** Minor in Computer Science

Jessica Y. Tang Minor in Computer Science

# SLOAN SCHOOL OF MANAGEMENT

#### **Bachelor of Science in**

<u>Management</u> Course XV-1 Sloan School of Management

**Mati K. Alemayehu** Minor in Computer Science

**Massimo Augustine** 

**Melissa Cao** Minor in Music

Marielle J. Folan

Luis Hong Sanchez

Maël J. Le Scouëzec

Theresa T. Lo

Andrew Christopher Lu Also with a Major in Course XIV-1

Nicholas R. Martin (February, 2020)

Nwanacho U. Nwana Also with a Major in Course XVII

Kevin Robert Petrovič

**Rebecca Hyun-ji Shin** Also with a Major in Course XIV-1

Marissa Steinmetz (February, 2020)

#### Christopher M. Washington

Alice Zhou Minor in Biology

#### Bachelor of Science in Business Analytics Course XV-2

Sloan School of Management

**Aidan James Einloth** Minor in Political Science

Liam D. Fenlon Minor in French

**Charles J. Nodus** Minor in Computer Science

#### Ethan Adam Oak

Willem Laurens Reerink (February, 2020)

Ricardo D. Villarreal

**Aidan N. Westley** Minor in Computer Science

Bachelor of Science in Finance Course XV-3 Sloan School of Management

#### **Thomas Insuh Cho**

Kelly A. Craig Minor in Political Science (September, 2019)

Aubrey T. Grimshaw Also with a Major in Course XIV-2

Alexis N. Groark Also with a Major in Course II-A

#### Brandon E. Kramer

**Ato Kwapong** Minor in Computer Science

Ming Liu Also with a Major in Course VII-A Minor in Political Science

#### Vick Cheung Liu

#### John Conover Reece III

Simran A. Vaidya Minor in Spanish

**Joseph R. Vasile** Also with a Major in Course XIV-1

**Carol Sophia Wu** Minor in Statistics and Data Science

**Gabriella Maria Zak** Minor in Mathematics Minor in Literature

# SCHOOL OF SCIENCE

#### **Bachelor of Science in**

<u>Chemistry</u> Course V Department of Chemistry

#### Alexander Igor Alabugin

Antonio M. Buscemi (February, 2020)

**Gabriela Cazares** Minor in Environment and Sustainability

Erica Jillian Flear Minor in Ancient and Medieval Studies

#### Aria M. Fodness

**Darnell Scott Granberry, Jr.** Also with a Major in Course VI-3

**Erin Elizabeth Grela** Also with a Major in Course XIV-1

**Christopher Gerald Hillenbrand** Also with a Major in Course XVIII Minor in Physics (February, 2020)

**Priscilla Liow** Minor in Mathematics Minor in Music

**Elyse Plachinski** 

#### **Rebecca** Ann Sloan

Ruth Rosegrant Tweedy Also with a Major in Course XII

#### **Bachelor of Science in** Chemistry and Biology

Course V-7 Department of Chemistry

#### **Miguel Angel Aguilar Ramos**

Karen V. Camacho Minor in Russian and Eurasian Studies

Valentina Y. De La Rosa (February, 2020)

Madeleine Celia Kline Minor in Spanish Chun-Ting Liu (February, 2020)

**Lynn Yuying Liu** Minor in Spanish

Tafara L. Mashanda

Claire M. O'Callaghan

Samuel A. Solomon Also with a Major in Course VIII Minor in Nuclear Science and Engineering

#### Leon Ho Yim

**Sherry X. Zhou** Minor in French

Bachelor of Science in Biology Course VII Department of Biology

Muskaan Aggarwal Minor in Ancient and Medieval Studies

Brigid Mary Bane Minor in Chemistry

**Crystal Tin-Tin Chang** 

#### Julia Hayoung Cho

Lauren C. Clamon Also with a Major in Course XXI-L

Christopher John Copeland

Mariam E. Dogar Minor in Urban Studies and Planning

Joseph Raymund Baniquett Espiritu

**Trevor E. Ewald** 

Hayley M. Flores Minor in Public Policy

Apolonia Gardner Also with a Major in Course IX Minor in Chemistry Minor in Biomedical Engineering

#### Cynthia A. Harris

**Allison Catherine Huske** Minor in Literature

#### Swarna Kushmanda Anjanita Jeewajee

Grace Yukiko Kuffner Also with a Major in Course XXI-M

Evan Remy Lang

Laura Z. Liao Minor in Women's and Gender Studies

Kyra V. Majors

Leah K. McKinney Minor in Ancient and Medieval Studies

Maia Mesyngier Minor in Biomedical Engineering

Hayden G. Niederreiter Minor in Business Analytics

Taiylor Renae Nunn

Amanda P. Putnam Minor in Public Policy

#### Anan Quan

Rachel R. Rock (February, 2020)

Yhiedania Santiago

J. L. Shelly Minor in Entrepreneurship & Innovation

**Candace Tong-Li** Minor in Brain and Cognitive Sciences Minor in Literature

#### Edward Joseph Weldon IV

Fei Yu (February, 2020)

Bachelor of Science in Physics Course VIII Department of Physics

Ibrahim M. Alnami (September, 2019)

Vilhelm Lee Andersen Woltz Also with a Major in Course VI-2 Minor in Mathematics Anuj Apte Also with a Major in Course XXIV-1 Minor in Mathematics Minor in Music

**Siranush Babakhanova** Minor in Computer Science

**Emma K. Batson** Also with a Major in Course VI-1

**Jacob Joseph Benoit** Minor in Finance

Anoushka R. Bose Also with a Major in Course XVII

Jonathon Steffon Brown

**Dylan Matias Carranza** Minor in Mathematics Minor in Computer Science

Eric R. Chen Also with a Major in Course VI-2

Allen Cheng Also with a Major in Course XIV-2

**Tatsuya Warren Daniel** Minor in Mathematics Minor in German

#### James Barrie Drabble

**Brandon Epstein** Also with a Major in Course XVIII

Hannah Margaret Field Also with a Major in Course VI-2

Sophie E. Fisher

Shane P. Fitzgerald

Eleanor Graham

**Grant Tyler Gregus** 

**Tyndale D. Hannan** Minor in German

**Alexandra G. Hanselman** Minor in Astronomy

**Elizabeth M. Harkavy** Also with a Major in Course VI-3

Jesus Herrera Also with a Major in Course XVIII

**Clyde E. Huibregtse** Also with a Major in Course XVIII-C Hector L. Iglesias Minor in Literature

Hikari Iwasaki Also with a Major in Course XVIII Minor in Chemistry Minor in Computer Science

Matthew L. Johnston Minor in Computer Science

Malvika R. Joshi Also with a Major in Course VI-3 Minor in Mathematics

**Sloan W. Kanaski** Also with a Major in Course XVIII

Robert Q. Kao

**Ji Seok Kim** Minor in Music Minor in Computer Science

John P. Kinney IV Minor in Linguistics

**Talya Klinger** Minor in Mathematics

Daniel A. Korsun Minor in Nuclear Science and Engineering

#### Megan C. Kralj

Jay Laone

Kathryn Anna Lawrence

Ivy Li Also with a Major in Course XXI-L

#### Kevin Limanta

**Ting-Chun Lin** Also with a Major in Course XVIII (February, 2020)

#### Vincent Liu

Federico Llarena III Also with a Major in Course XIV-2 Minor in Mathematics

Adrian Leonardo Meza Also with a Major in Course VI-2

Brian A. Mills Minor in Japanese

Jason T. Necaise Also with a Major in Course XVIII

#### Eber Nolasco-Martinez

Nolan Peard Also with a Major in Course XXI-M

Isabelle Yan Phinney

Ryan C. Przybocki

Jane C. Reed Also with a Major in Course XXII

William W. Roberts Also with a Major in Course XVIII

**Eduardo E. Sanchez, Jr.** (February, 2020)

Elina Maria Sendonaris

Adrian I. Silva

**Cecilia Elena Siqueiros** Minor in Music

**Benjamin A. Sockol** Also with a Major in Course XVIII

Kristen Marie Surrao Minor in Mathematics Minor in Computer Science

**Bahrudin Trbalić** Also with a Major in Course VI-1

Shiaoching Tse

Gustavo A. Velez Also with a Major in Course XVI-ENG

Vanessa W. Wong Also with a Major in Course XIV-1

#### Laurel M. Wright

**Qingyue Wu** Also with a Major in Course XVIII-C

Michelle Deng Xu Also with a Major in Course XVIII

Megan Adrienne Yamoah Also with a Major in Course VI-1

Josephine J. Yu Also with a Major in Course XVIII

Jovan Y. Zhang

Bachelor of Science in Brain and Cognitive Sciences

Course IX Department of Brain and Cognitive Sciences

#### Skylar J. Brooks

Merryn C. Daniel Minor in Biology

**Gretchen M. Eggers** Also with a Major in Course VI-3

#### Jingxuan Fan

Andrea Patricia Garcia

Tarun Vinod Kamath Minor in Biomedical Engineering (See also M.Eng., Course XX-P)

**Ohyoon Kwon** Also with a Major in Course XXIV-1

G. R. Marvez

Maedeh Marzoughi (February, 2020)

**Briana Rose McRae** Minor in Computer Science

#### Habiba Noamany

Mercedes Melissa Clarke Riley Also with a Major in Course XXIV-1 Minor in Business Analytics

Ashti M. Shah

**Sara Muluneh Sime** Minor in Anthropology

**Cailey Alexandra Irion Talbot** Minor in Anthropology

Aiyedun J. Uzamere

Eke M. Wokocha, Jr.

**Chun-Chen Yao** Minor in Biomedical Engineering

Vivian Zhou Minor in Biology Minor in Women's and Gender Studies

**Lena Li Zhu** Also with a Major in null Minor in Biomedical Engineering

#### Bachelor of Science in Earth, Atmospheric, and Planetary Sciences

Course XII Department of Earth, Atmospheric, and Planetary Sciences

Andrew T. Cummings Also with a Major in Course VIII

Andrew J. Iversen Minor in Physics

**Charlotte L. Minsky** Also with a Major in Course XXI-E

#### Matthew R. Rushlow

Janice Shiu Minor in Statistics and Data Science

Bachelor of Science in Mathematics Course XVIII Department of Mathematics

Al Baraa Abd Aldaim Also with a Major in Course XXIV-1

Simon C. Alford Also with a Major in Course VI-3

**Fadi Atieh** Also with a Major in Course VI-3

#### **Kevin William Beuchot Castellanos**

#### Henrik J. Boecken

**Emily S. Cheng** Also with a Major in Course VI-3

Anlong Chua

Sanath K. Devalapurkar Minor in Physics

Matthew V. Ellison

Alonso Espinosa Domínguez

Maxwell K. Fishelson

Marisa R. Gaetz Minor in Philosophy

Luis E. Garcia

Meghal Gupta

Kit Ives Peter Haines

#### Elizabeth J. Han

#### Bernardo A. Hernández Adame

**Calvin Hsu** Also with a Major in Course VI-3 Minor in Economics

Kathryn Anna Jiang Also with a Major in Course XXI-L

Menachem Mendel Keller Also with a Major in Course XXIV-1 (February, 2020)

Ashley Hyowon Kim Also with a Major in Course VI-2

Aleksa Konstantinov

Ama A. Koranteng (February, 2020)

**Olivia Graylen Koslow** Minor in Computer Science

#### Michael Kural

#### Timothy K. Leplae-Arthur

**Justin K. Lim** Also with a Major in Course VI-3

Allen X. Liu (February, 2020)

**Eric M. Lu** Also with a Major in Course VI-3

Marta Manzin Minor in Literature Minor in Computer Science (February, 2020)

**Olga Medrano Martín del Campo** Minor in Computer Science

**Lingjie Mei** Also with a Major in Course VI-3

**Peter H. Mizes** Minor in Computer Science

**Jonathan Erik Monahemi** Also with a Major in Course XV-2 Minor in Economics

Hamed Mounla Also with a Major in Course XIV-1

**Eshaan Nichani** Also with a Major in Course VI-3

Jack D. Novak Also with a Major in Course XV-2 Zachary A. Obsniuk Also with a Major in Course XXI-M

**Yixuan Pei** Also with a Major in Course VI-3

**Enrique Javier Pérez Serra** Also with a Major in Course XIV-1 Minor in Statistics and Data Science

Alok R. Puranik Also with a Major in Course VI-3

Lara I. Rakocevic Also with a Major in Course VI-3 (February, 2020)

Raimundo Xavier Rodriguez Also with a Major in Course IX

#### Diego Alonso Roque Montoya

Ahaan S. Rungta (February, 2020)

Ashwin Sah (February, 2020)

Maya R. Sankar Also with a Major in Course VI-3 Minor in Music

Mehtaab Sawhney Minor in Computer Science (February, 2020)

**Abraham Shalom Mezrahi** Also with a Major in Course VI-14 Minor in Business Analytics

Hunter A. Smutney Minor in Physics

**Douglas John Stryker** 

**Claire S. Tang** Also with a Major in Course VI-3

Jessica Sarah Titensky Minor in Physics Minor in Computer Science (February, 2020)

#### Jared Anthony Tramontano

Margaret Katherine Trautner Minor in Mechanical Engineering Minor in Computer Science

**Robert C. Upton IV** Also with a Major in Course XIV-1

**Chase P. Vogeli** Minor in German **Tony Tong Wang** Also with a Major in Course VI-3

Matthew Barnert Weiss Also with a Major in Course VI-14

Richard Yi Also with a Major in Course VIII

Kate E. Yuan Minor in Computer Science (February, 2020)

#### **Chaim Avram Bettigole Zeff**

Julie Zhang Minor in Economics (February, 2020)

Ziqi Zhou Minor in Biomedical Engineering

Taras Zhylenko Also with a Major in Course VI-3 Minor in Statistics and Data Science

# **Bachelor of Science in**

Mathematics with Computer Science Course XVIII-C Department of Mathematics

Hannah S. Chen Minor in Brain and Cognitive Sciences

John David DiCarlo

**Matthew Farejowicz** 

Juan D. Gil Sanhueza

Yaakov A. Helman Minor in Economics

#### Alexander Thomson Leighton

Ian James McNally

Manuel A. Montesino

Talia E. Pelts

Georgia U. Phillips Minor in Economics

Aleksejs Popovs Also with a Major in Course XXIV-1

**Chad H. Qian** Also with a Major in Course XIV-1 Minor in Political Science **Deon Jordan Richmond** Minor in Japanese

Sarah G. Von Ahn Minor in Statistics and Data Science

Amanda Fei Wang Also with a Major in Course XV-2 (February, 2020)

Sarah Anqing Wu Also with a Major in Course IX

**Stephanie Louie Yuen** Minor in Finance

Lillian Zhang

**Robert Jeffery Zollinger** Minor in Music

Jennifer Zou Also with a Major in Course XIV-1 (February, 2020)

# SCHOOL OF ARCHITECTURE AND PLANNING

#### Master of Architecture

Course IV Department of Architecture

Alexandre Beaudouin-Mackay (February, 2020) A New Way of Play: The Forms and Functions of Participatory Design and Critical Pedagogies

**Gustavo Carlos Casalduc Rivera** (February, 2020) Terminal: A Public Archive for Habana

**Stratton Coffman** (February, 2020) Bagging

**Boliang Du** (February, 2020) Sichuan Fog -- Architecture and Moisture

**Jaya Alba Eyzaguirre** (February, 2020) Objects of Home

Marlena B. Fauer (February, 2020) Under Observation: A Site of Totality in Uncertain Futures

**Dalma Földesi** (February, 2020) More or Less Exact

**Shepard Anton Halsey** (See also S.M., Real Estate Development) Cyclic Matter(s) in Architecture

**Gabrielle Joyce Heffernan** (February, 2020) Responses to the Everyday: Reliefs from the Private

**Trevor Nathaniel Herman Hilker** (February, 2020) Other Stories

**Stephan Michael Hernandez** (February, 2020) Making Kin: Landscape, Material, and Senses

Angeline Claire Jacques (February, 2020) Mission 2066: A National Park for the Anthropocene **Dennis Steven Kosovac** Untitled, Ambiguity, and Architecture

**Thuy Thanh Le** (February, 2020) Falsework: Staging Construction

**Hyerin Lee** Weathering the Storms: New Suburban Typology for Coastal Cities Through a Case Study on Winthrop, MA

**Catherine Anabella Lie** Sourdough Architecture

**Kevin Allen Marblestone** (February, 2020) Pedagogy of the Fourth Wall: Toward a Time-Based Architecture

Aaron Powers (February, 2020) Stimulation, Speculation, Simulation: The Architecture of the Captured City That the Corporation Gave Us

Valeria Rivera Deneke (February, 2020) One Degree Removed: The Last Carnival of Venice

**Jung In Seo** (February, 2020) More or Less Exact

**Taeseop Shin** (February, 2020) Making Kin: Landscape, Material, and Senses

**Cristina Solis** (February, 2020) Tremulous Lines, the Alternative History of a Site Exception

Cheyenne Jacqueline Louis Vandevoorde (February, 2020) Into The Abstract

Sarah Elizabeth Wagner (February, 2020) A New Way of Play: The Forms and Functions of Participatory Design and Critical Pedagogies

**Patrick Alexander Weber** Don't Be A Tourist! - Imagining a Post-Touristification Berlin **Emily Mary Whitbeck** (February, 2020) Pedagogy of the Fourth Wall: Toward a Time-Based Architecture

**Chaoyun Wu** (February, 2020) Machine Learning in Housing Design: Exploration of Generative Adversarial Network in Site Plan/Floorplan Generation

**Fei Xu** (See also S.M., Real Estate Development) From Seed to Sale

Shane Xue Ying Zhang (February, 2020) (See also S.M., Real Estate Development) Value in Design? Features, Pricing, and Design Strategies

Zhujing Zhang (February, 2020) Komorebi 木漏れ日Embedding Dappled Sunlight in the Built Environment

Master of Science in Architecture Studies Course IV Department of Architecture

Nawaf Bin Abdulaziz Bin Ayyaf Al-Mogren Diriyah Narrated by its Built Environment: The Urban Development of the First Saudi Capital (1744-1818)

Nathaniel Joseph Elberfeld Computing Embodied Effort in the Constructible Design Space of Bobbin Lace

Joud Enaam Mounir El-Mabsout Contested Valleys, Reclaiming the Common Landscape in Bisri, Lebanon

**Rodrigo Escandón Cesarman** How to Read the Self-building Manual: Houses, Self-builders, and Experts in Mexico

**María Esteban Casañas** Artificial Perceptions: Biases, Fictionalities, and Signifiers. **Melissa Gutiérrez Soto** Manual for Hospitable Cities: Learning from Migration

**Rachel Pei Hirsch** Building Mughal Burhanpur

#### Yichen Jia

(See also S.M., Course VI) Constructing Virtual Reality Exhibitions with Multimodal Interactions

#### Sea Hoon Kim

(See also S.M., Real Estate Development) Technology-Enabled Infrastructure Analysis of its Economics, Public Benefits and Urban Experience

#### Meng-Fu Kuo

Urbanism Across: New Urban Ground in Taipei's Old City Core

#### Lukas Lesina Debiasi

(See also S.M., Course VI) Illuminating Preference: Rethinkng Colored Lighting in Workplace Environments

#### Qianhui Liang

(February, 2020) (See also S.M., Course VI) Machine Mediated Human Perception

#### Yuxuan Liu

Measuring the Immeasurable: An Experiment for a Machine to Map Low-Level Features to High-Level Semantic Representation of Architectural Space Using a Single View Photo

#### Semine Long-Callesen

The Raffles Museum in the Shift from Nature to Culture

#### Daniella Samira Maamari

(February, 2020) Reviving Cosmopolitan Beirut: A Case Study of Three Modernist Art Spaces

#### Molly Mason

Crafting Decisions: Integrating Design, Fabrication, and Assembly for Six-Axis Robotic Arms

#### Andrew Robert Moorman

(February, 2020) (See also S.M., Course VI) Machine Learning Inspired Synthetic Biology: Neuromorphic Computing in Mammalian Cells

#### Nof Nathansohn

Digital Nomads: Space+Narrative Computing for the Village of Al Araqib

#### **James Patrick Peraino**

(See also S.M., Course VI) Architectural Epidemiology: A Computational Framework

#### Charu Sharma

Building an All-Electric Volpe: A Perspective on Economic Considerations and Carbon Emissions.

#### Michael Todd Stradley Colorzoom

Tuo Sun

(February, 2020) (See also S.M., Course VI) Synthesizing 3D Morphology from a Collection of Urban Design Concepts

#### Shaoying Tan

(See also S.M., Course VI) Space is the Interface: Evaluating Spatial Knowledge Acquisition in Virtual Reality from the Perspective of Locomotion

#### Yair Yakov Titelboim

(February, 2020) (See also M.C.P., Course XI) Granular Urbanism: Adaptive Strategies for Obsolete Downtown Neighborhoods

Anna Vasileiou Thinking Manual: A Digital Framework for Designing and Making

#### **Piyush Verma**

Rainwater Harvesting in Western Ghats of Maharashtra. The Case of Velhe Block, Pune A comprehensive multi-scalar approach.

#### Haoyu Wang

Digital Nomadism - The Shaping of a Future Place for Placeless People

#### Master of Science in Building Technology

Course IV Department of Architecture

#### **Demi Lin Fang** Timber Joinery in Mode

Timber Joinery in Modern Construction: Mechanical Behavior of Wood-Wood Connections

#### Master in City Planning

Course XI Department of Urban Studies and Planning

#### Zachary Wayne Avre

"The Backbone of Chicago's Economy": the Chicago Microlending Institute and the Road to Financial Inclusion for Entrepreneurs of Color

#### Neha Bazaj

Daylighting Pathways to Good Jobs in California's Solar Industry

#### Abigail Bliss

Fault Lines: The Legacy of Urban Renewal in Hudson, NY

#### **Braxton Corbin Bridgers**

The Climate Code: A Framework to Enhance Emergency Response Through Civic Digital Participation

#### Tessa Mae Buono

(September, 2019) Equitable Visitation of National Parks: Shedding Light on Community Partner Perspectives to Improve Park Planning for All

#### Anne Kiyono Calef

Provisioning Public Education: Infrastructural Violence, School Districting, and Spatialized Inequity in the San Francisco Bay Area

#### Diego Hernán Castillo Peredo

Development inequity: Advancing distributive justice by localizing SDG indicators for municipalities in Chile

#### Agustín Corwin Cepeda

The Punto Urban Art Museum in Salem, MA: A Case Study for Shared Authority

#### Jenny Wenjie Chen

Integrating Neighborhoods, Segregating Power

#### Julia Curbera

The Punto Urban Art Museum in Salem, MA: A Case For Shared Authority

#### Peter Leopold Damrosch

(February, 2020) Mobility as a Public Service: Integrating Civil Rights Laws in Partnerships Between Transit Agencies and Ride-Hailing Companies Sarah H. Edgar Does the Siting of Neighborhood Incarceral Facilities Influence Local Police Behavior?

#### **Stephen Migliore Erdman**

Resilience Special Assessments for Housing Security: A Model for Mitigating Climate and Environmental Gentrification in New York City

#### Yichun Fan

Air pollution, Avoidance Behaviors, and Neglected Social Costs: Evidence from Outdoor Leisure and Commuting Behaviors

Zhuangyuan Fan

Connecting the Last Mile: Understanding Internet Service Providers Typologies to Connect Underserved America

#### Julia Marie Field

Urban Tree Canopy Governance and Redlined Neighborhoods: An Analysis of Five Cities

#### Mario Jezierski Goetz

Marginal Mobility: Public Transit Infrastructure for Precarious Settlements in Metropolitan Buenos Aires

#### Dylan Christopher Halpern

Community Remedies for Civic Disorientation, De-mobilization, and Malinformation

#### Carl Gunnar Hedman, Jr.

New Prescriptions? Nonprofit Hospital and Health System Charitable Spending on Housing as a Social Determinant of Health

#### Anne Woodbridge Hudson

(See also S.M., Transportation) Whereto Next? Analyzing Livability and Accessibility in the Later Stages of Life

#### Jeff Jamawat

(September, 2019) (See also S.M., Real Estate Development) Redesign, Redeploy, and Re-envision Urban Corporate Headquarters: Amazon's Seattle Campus Case Study

#### Shail Joshi

Managing the Water Crisis in Bundelkhand, India: A Governance Approach

#### Jonathan Hoagland Leape

(See also S.M., Transportation) Winning the Housing Lottery in Rio de Janeiro: Curse or Cure?

#### Jintai Li

(September, 2019) (See also S.M., Transportation) Future Transit Service for a Broader User Base: Demand Analysis of Hypothetical Autonomous Vehicle Mobility Services Using a Stated Preference Approach

#### Kevin M. Li

(February, 2020) An Analysis of Nonprofit Board Interlock Networks

Kendrick R. Manymules Coal's Afterlives, Diné (Energy) Futures

#### Zoë Louise McAlear

Building Community Resilience to Climate Change with Facilitated, Collaborative Dialogue: Evaluating the VCAPS Process

#### Emmett Zane McKinney

Code Shift: Data, Governance, and Equity in Los Angeles's Shared Mobility Pilots

Kenyatta Theda McLean Reclaiming Time and Space: Bringing Historical Preservation into the Future

#### Hannah Hunt Moeller

National Forests are (not) Parks: Managing Amenity Migration to America's National Forests

#### Ian Michael Ollis

Alleviating Carmageddon with a Research-Driven Rapid Transit Approach

#### Stephanie Elaine Peña

(Re)Centering Place within Detroit's Black Gentrification

Daniel Larkin Powers Can State and Local Basic Income Policies Support Planning for Equity?

Marisa Rene Prasse On Shaky Ground: How Environmental Hazards Impact Affordable Housing Development in San Francisco

#### **David Bloom Robinson**

The Stability Gap: Evictions and the Legacy of Housing Segregation in Boston's Communities of Color

#### Sean Patrick Robinson

(September, 2019) (See also S.M., Real Estate Development) A Regional Assessment of Transit-Oriented Office Development Opportunities in Boston's Suburbs

#### Radhika Singh

Managing the Water Crisis in Bundelkhand, India: A Governance Approach

#### Mary Hannah Smith

Creating a Market for Retreat: Transfer of Development Rights as a Climate Adaptation Tool in Coastal Massachusetts

#### Wonyoung So

Wesurvived.nyc: Participatory Mapping as a Political Act

#### Tanaya Srinivasakrishnan

Calculating Governance: City Benchmarking & Its Discontents

#### Tianyu Su

Identifying Commuting Behavior Segments for TDM Program Design: University Case Study

#### Jialu Tan

(See also S.M., Course VI) Using Machine Learning to Identify Populations at High Risk for Eviction as an Indicator of Homelessness

#### Fiona Tanuwidjaja

A Guide to Palm Oil in Indonesia: Institutions and Their Effects on Independent Smallholder Farmers

#### Yair Yakov Titelboim

(February, 2020) (See also S.M.Arch.S., Course IV) Granular Urbanism: Adaptive Strategies for Obsolete Downtown Neighborhoods

#### Vanessa Toro Barragán

"¡El Pueblo No Se Rinde, Carajo!" (The People Will Never Give Up, Dammit!): A Case Study of the Buenaventura Civic Movement's Contributions to Insurgent Planning

#### Natalia Isabelle Vidigal Coachman

Planning Child-Friendly, Educating, and Learning Cities: An Urban Framework for Sao Paulo

#### Carolyn Weng Yang

Governing the Urban Innovation Economy: Trade-Offs Between Equity and Growth

#### Yao Zhao

(February, 2020) (See also S.M., Course VI) Deep Learning for Sentiment and Event-Driven REIT Price Dynamics

# Master of Science in Urban Studies and Planning

Course XI Department of Urban Studies and Planning

#### Suresh Subramanian Does Living in a Slum Matter for HIV Medication Adherence? Examining Adolescent Behavior in Matero, Zambia

#### Master of Science in Media Arts and Sciences

Program in Media Arts and Sciences

#### May Alhazzani

(September, 2019) Deep Embedding Approach to Classify Purpose of Trips between Cities from GPS Data

Safinah Arshad Ali (September, 2019) Designing Child Robot Interaction for Facilitating Creative Learning

**David Wesley Anderton-Yang** (September, 2019) Countering Source Bias in News

#### Lizbeth Barrios De La Torre Exploratory Design Methods and Techniques in Support of Space Mission Concept Development

Marc Exposito Gomez (September, 2019) The LVN Mixtapes: Using Augmented Audiotapes for Story Sharing

Adam Jedidiah Haar Horowitz (September, 2019) Incubating Dreams Awakening Creativity

#### **Tsung-Han Hsieh** (September, 2019) Design and Control of a Two-degree-offreedom Powered Ankle-Foot Prosthesis

Margaret Ann Hughes

Keeper: Online conversation support scaffolding modeled after ancient and modern social technologies

#### **Britney Lorraine Johnson**

(September, 2019) Kicks x Cliques: Exploring the Intersection of Sneaker Culture and Mental Health in the Black Community

#### Noah Corinthian Jones Prediction and Analysis of Degree of Suicidal Ideation in Online Content

**Joseph Henry Kennedy, Jr.** Designing for Uncertainty: Material-Based Fabrication Processes for

Indeterminate Outcomes

Felix Lorenz Kraemer Live to Build, Build to Live: Organism-Machine Interfaces for Co-fabrication

Hane Lee (September, 2019) Freedom Simulator

**Nicolas Alexander Lee** Designing for the Endless Ecosystem

Isabella Loaiza Saa (September, 2019) Cheap Signals and Costly Consequences

**Tomohiro Maeda** Computational Imaging with Scattered Photons to See inside the Body

**Bridgit Claire Mendler** OurStory: Dispute System Design Technology for Stakeholder Inclusion

Marian Mwikali Muthui Jiradi: Reflective Documentation to Support Creative Learning and Skills Development

**Ufuoma Ovienmhada** Earth Observation Technology Applied to Environmental Management: A Case Study in Benin

Vikraman Parthiban (September, 2019) LUI: A Scalable, Multimodal Gesture and Voice Interface for Large Displays

**Blakeley Hoffman Payne** Can My Algorithm Be My Opinion?: An Ethics of Artificial Intelligence Curriculum for Middle School Students

**Ri Ren** Comb the Honey: Bee Interface Design

**Oscar Rosello Gil** (February, 2020) HeartBit: Mindful Control of Heart Rate Using Haptic Biofeedback

#### **Caroline Rozendo Xavier dos Santos** (September, 2019) PerForm: Deformable Interface for

PerForm: Deformable Interface for Dynamic Representation of Sound Through Meaningful Shapes **Tony Shu** (September, 2019) Coordination of Lower Limb Movement Utilizing the Agonist-Antagonist Myoneural Interface

**Tomás Alfonso Vega Gálvez** (September, 2019) μJawstures: Jaw-teeth Microgestures for Discreet Hands-and-Eyes Free Mobile Device Interaction

**Zeguan Wang** Whole-Brain Voltage Imaging of Larval Zebrafish Using Light-field Microscopy

Ramon Elias Weber Geometries of Light

Jerry Wei-Hua Yao (September, 2019) IDK: An Interaction Development Kit to Design Interactions for Lightweight Autonomous Vehicles

Seong Ho Yeon (September, 2019) Design of an Advanced sEMG Processor for Wearable Robotics Applications

#### Takatoshi Yoshida

(September, 2019) SCALE: Exploring Human-Object Interaction Through Force Vector Measurement

# Master of Science in Media Technology

Program in Media Arts and Sciences

# Carlos Núñez López

(September, 2019) A Modular and Stretchable Electronic System for On-body Health Monitoring Applications

# <u>Master of Science in Real Estate</u> <u>Development</u>

Center for Real Estate Development

Salma Samir Abdelgawad Cross-Subsidy Models for Urban

Manufacturing

Arash Arbabi (February, 2020) Capturing the Sun: How to Monetize Solar Energy in Multi-family Developments

Stefan James Bird (February, 2020) Cash Flowing Solar Developments for Long-Term Real Estate Redevelopment Opportunities

**Philip Caporaso** (September, 2019) Taxi Activity as a Predictor of Residential Rent in New York City

**Jeffrey Thomas Dougherty** (September, 2019) From Clicks to Bricks: The Impact of Digital-native Consumer Brands on Retail Real Estate

**Tianyi Fan** (February, 2020) An International Comparison on Coworking Companies Using Case Study Approach

**Bretton Cody Finley** (September, 2019) The Viability of the "Build-to-Rent" Single-Family Model in Tertiary Markets

**Shepard Anton Halsey** (See also M. Arch., Course IV) Cyclic Matter(s) in Architecture

**Abdulrahman Hadi Hammoud** (February, 2020) A Review of the Housing Market in Beirut between 2005 and 2019

**Charles Thomas Hope** (September, 2019) The Maturation and Resiliency of the Self-Storage Asset Class

Jeff Jamawat (September, 2019) (See also M.C.P., Course XI) Redesign, Redeploy, and Re-envision Urban Corporate Headquarters: Amazon's Seattle Campus Case Study

Sea Hoon Kim (See also S.M.Arch.S., Course IV) Technology-Enabled Infrastructure Analysis of its Economics, Public Benefits and Urban Experience

**Justin Christopher Lai** (September, 2019) The Leasehold as an Alternative Ownership Structure Valeri Patricia Limansubroto

(February, 2020) Challenging the Generic: From Space to Place in Urban Development

Aaron Adam Manji (September, 2019) Co-Living as an Emerging Market: An Assessment of Co-living's Long-Term Resiliency (with S.H. Pepper)

Kenneth Paul Nolan (February, 2020) Transit Oriented Development: Best Practices and Stakeholder Perspectives

**Wee Kian Alvin Ong** (September, 2019) Quantifying Partnership Terms in Real Estate Joint Ventures

Sam Howard Pepper (September, 2019) Co-Living as an Emerging Market: An Assessment of Co-Living's Long-Term Resiliency (with A.A. Manji)

**Gina Marie Pfingston** (September, 2019) Risk Perception of Unentitled Land

Sean Patrick Robinson (September, 2019) (See also M.C.P., Course XI) A Regional Assessment of Transit-Oriented Office Development Opportunities in Boston's Suburbs

**Eric Charles Rosenthal** (September, 2019) A Development Perspective on Creating Workforce Rental Housing Proximal to

Yuling She Redevelopment Option Value for Industrial Property

Major Employment Centers

**Jiri Sykora** (September, 2019) Vacancy Durations in the Office Market

**Renjie Tang** (September, 2019) Real Estate Crowdfunding in China

Wade Morrow Vaughn (September, 2019) Overlooked Opportunities: Small Class B Multifamily in Secondary Sun Belt Markets John Royall Warman

(February, 2020) Incentivizing Historic Rehabilitation and Adaptive Reuse in the United States and United Kingdom

Christopher Joseph Whittier (September, 2019) Commercial Real Estate Volatility: A Decomposition of Historical Market Values

Thomas Forbes Worth II (September, 2019) Housing Assistance and the Creation of Household Wealth

Fei Xu (See also M. Arch., Course IV) From Seed to Sale

Qianwen Yin (September, 2019) Exploring REITs for Community-Based Retail Development in China: A New Strategy to Create Better Places to Live

Nicole Remi Zaccack (February, 2020) How Real Estate Developers Define and Implement Their Social Impact Goals through the Real Estate Development Process

Shane Xue Ying Zhang (February, 2020) (See also M. Arch., Course IV) Value in Design? Features, Pricing, and Design Strategies

# <u>Master of Science</u> (without specification of field)

Salah Assana Med. Arts & Sciences Cardiovascular Activity Monitoring Using mmWaves

Sara E. Falcone Med. Arts & Sciences (February, 2020) Zipped Assembly

Jake Robert Read Med. Arts & Sciences (February, 2020) Distributed Dataflow Machine Controllers

#### Han Wen Shen Med. Arts & Sciences (September, 2019) Affective Computing and Crowdsourcing: Subjective Labels and Sequential Effects

#### **Elizabeth Ashton Strait**

Med. Arts & Sciences (September, 2019) Genetic Circuits for Functional Screens of Cas12a Guide RNA Libraries

#### Jaleesa Trapp

Med. Arts & Sciences (September, 2019) Uncovering Hidden Pathways

#### Ezinne Egondu Uzo-Okoro

Med. Arts & Sciences Characterization of On-Orbit Robotic Assembly of Small Satellites

# SCHOOL OF HUMANITIES, ARTS, AND SOCIAL SCIENCES

Master of Science in Economics Course XIV Department of Economics

Iason Nikolaos Zaverdinos

Behavioral Responses to Public Pension Cuts: Evidence from the Greek Financial Crisis

## Master of Science in Political Science Course XVII Department of Political Science

Samuel Rockwood Hoar

(September, 2019) Presidential Power and Partisan Polarization

#### Len Chow Koh

(September, 2019) China's Preference for the Regional Order in East Asia

**Cheng Yi Lewis Won** (September, 2019) Political Cleavages and the Global Privacy Regime

#### Master of Science in Science Writing Course XXIW

Program in Writing and Humanistic Studies

#### **Diego Arenas**

(September, 2019) Minding the Empathy Gap: How Insights into Brains and Behaviors are Placating Polarization

**Brittany Jean Flaherty** (September, 2019) The Conservation Sacrifice: How Far New Zealand Will Go to Save Its Birds

**Eva Charles Anna Frederick** (September, 2019) Plague of Absence: Insect Declines and the Fate of Ecosystems

**Devi Kailasa Lockwood** (September, 2019) The Living Library **Emily R. Makowski** (September, 2019) Mass Appeal: Saving the World's Bananas from a Devastating Fungus

**Emily Pontecorvo** (September, 2019) Navigating the 21st Century Without Vision

Madeleine Renee Turner (September, 2019) Future Talk: The Race to Build a Bot that Gabs like a Human

Gina Carmela Vitale (September, 2019) Asbestos, USA: Ambler, Pennsylvania Once Thrived as the Asbestos Capital of the World - Now it Grapples with the Waste That Was Left Behind

## Master of Science in Linguistics

Course XXIV Department of Linguistics and Philosophy

Verena Hehl (September, 2019) Intervention Effects in German: A Contiguity Approach

Daniel Margulis

(September, 2019) Expletive Negation and the Decomposition of *Only* 

#### **Master of Science in** Comparative Media Studies

Program in Comparative Media Studies

**Elizabeth Denise Borneman** Data Visualizations for Perspective Shifts and Community Cohesion

**Iago Bueno Bojczuk Camargo** Media Cartographies of Broadband Access in Brazil: The Case of the Geostationary Defense and Strategic Communications Satellite (SGDC-1) and Rural Schools Woorim Chung

Subverting "The Algorithm": Examining Anti-Algorithmic Practices on Social Media

**Judy Ann Heflin** AI-Generated Literature and the Vectorized Word

Samuel Romero Mendez

Health Equity Rituals: A Case for the Ritual View of Communication in an Era of Precision Medicine

Sultan Iman Sharrief

(September, 2019) Wrestling With Systemic Edges; Designing for Long Term Social Change

**Benjamin Luke Malanos Silverman** Fursonas: Furries, Community, and Identity Online

Han Su

Theory And Practice Towards A Decentralized Internet

Annie Wang

Creators, Classrooms, and Cells: Designing for the Benefits and Limitations of Learning In Immersive Virtual Reality

# SCHOOL OF SCIENCE

#### Master of Science in Chemistry

Course V Department of Chemistry

# Nadide Hazal Avcı

(February, 2020) Synthesis and Optimization of Synthetic Intermediates to Access C21-Oxygenated Aspidosperma Alkaloids

#### Hyehwang Kim

Utilization of Tetrametaphosphate Anhydride for the Synthesis of Disubstituted Tetraphosphates, Terminally Modified Nucleoside 5'-Pentaphosphates, and Beyond

#### **Chloe Anne Morgan**

(September, 2019) Solid-State NMR Investigation of Viral Fusion Glycoprotein 41 (gp41)

#### Merjema Purak

Synthesis and Applications of Functionalized Iptycenes

#### Jeffrey Neal Rosenberg

(February, 2020) Spectroscopic and Reactivity Studies on Graphite-Conjugated Salen Complexes

#### Master of Science in Biology

Course VII Department of Biology

#### **Daniel Fernando Ramirez Montero**

(September, 2019) An Assembly Model for the Autophagy Initiation Complex

#### **Master of Science in Physics**

Course VIII Department of Physics

#### Min Gu Kang

(February, 2020) Resonant Elastic and Inelastic X-ray Scattering Studies on Electronic Orders and Excitations in High-Temperature Superconducting Cuprates

#### Jianshu Li

(February, 2020) Preliminary Work for Three-Dimensional Imaging of the Epoch of Reionization with Interferometers

#### Zeyang Li

(September, 2019) Unified Treatment of Light-Induced Effects for Atomic Ensemble in Optical Cavities

#### Garrett Kenji Simon

Measuring Trapped-Ion Motional Decoherence through Direct Manipulation of Motional Coherent States

#### Master of Science in Brain and Cognitive Sciences Course IX

Department of Brain and Cognitive Sciences

#### Mackenzie C. Lee

A General Method for Three Color STED Microscopy with One Depletion Laser: Application to Primary Neuronal Cultures

#### Sebastian Boyd Templet

(February, 2020) The Role of Neurogranin in Modulating Contextual Memory and Plasticity: FMRP Involvement and Adrenergic-Dependent Facilitation

#### Master of Science in Earth and Planetary Sciences

Course XII Department of Earth, Atmospheric, and Planetary Sciences

#### Jorsua Herrera Bethencourt

(September, 2019) Molecular Characterization and Effect of Diagenesis and Maturation of Melanin in the Fossil Record

#### Taylor K. Safrit

Centaur Shapes and the Origin of Bilobate Jupiter-Family Comets

#### Anuar Togaibekov Monitoring of Oil-Production-Induced Subsidence and Uplift

# Master of Science in

<u>Mathematics</u> Course XVIII Department of Mathematics

#### **Mason Thomas Biamonte**

(February, 2020) Quantum Phase Estimation without the Quantum Fourier Transform

# AWARDED JOINTLY WITH THE WOODS HOLE OCEANOGRAPHIC INSTITUTION

# Master of Science in Mechanical Engineering

#### **Ryan Lee Conway**

Course II (September, 2019) Coordinated Tracking and Interception of an Acoustic Target Using Autonomous Surface Vehicles

#### Michael Jesus Humara

Course II Stochastic Acoustic Ray Tracing with Dynamically Orthogonal Equations

#### Andrew Stafford Johnson

Course II (September, 2019) Development and Deployment of a Novel Deep-sea *in situ* Bubble Sampling Instrument for Understanding the Fate of Methane in the Water Column

## Master of Science in Chemical Oceanography

**Tyler James Tamasi** Course XII (September, 2019) Nitrogen Cycling in Tropical Reef-Building Corals: A Case Study From the Gardens of the Queen, Cuba

# Master of Science in Physical Oceanography

#### Stephan Dominic Gallagher

Course XII (September, 2019) Oceanic Response Observations due to Passing Tropical Cyclones: An Assessment of Drag and Sea Spray Parameterizations

# **Master of Science in** Aeronautics and Astronautics

#### Kevin Joseph Doherty

Course XVI (September, 2019) Robust Non-Gaussian Semantic Simultaneous Localization and Mapping

#### Stewart C. Jamieson

Course XVI Enabling Human-Robot Cooperation in Scientific Exploration of Bandwidth-Limited Environments

#### Victoria Lynn Preston

Course XVI (September, 2019) Adaptive Sampling of Transient Environmental Phenomena with Autonomous Mobile Platforms

# SCHOOL OF ENGINEERING

# Master of Engineering in Civil and Environmental

Engineering Course I-P Department of Civil and Environmental Engineering

#### Ho Yin Ernest Ching

Truss Topology Optimization of Steel-Timber Structures for Embodied Carbon Objectives

#### Judyta Maria Cichocka

(February, 2020) INFRAME - Design and Construction of a Sequentially Erected Elastic Timber Gridshell

#### Ishani Desai

Designing Structures with Tree Forks: Mechanical Characterization and Generalized Computational Design Approach

**Ayse Y. Heckel** Spider Web Geometry Inspires Long Span Roof Trusses

#### Alexandra Abla Kawar

Comparative Study of Bracing Patterns and Materials for Tall Timber Buildings

Xin Y. Lo Analysis and Reproduction of Geopolymer Concrete

# Brian Todd Luster

Evaluation of the Design Space for Reinforced Concrete Building Components Subject to Blast Loading

#### Grace E. Melcher

Topology Optimized Hemispherical Shell Under Asymmetric Loads

#### Anna Sofia Montoya-Olsson

Parametric Modeling and Optimization of External Braced Frames for Embodied Energy and Daylight Availability

#### Herbert Mwesigye Nuwagaba

Opportunities for Affordable Construction in Uganda Using Locally Available Materials

#### Michael Roland Ramirez

Optimization and Analysis of Doubly-Curved Kirigami Space Frames **Diego Alfonso Rivera** Optimization of Patterned Surface Structures

Daniel Campbell Seats Form Finding of Structural Reused Material Trusses with Graphic Statics

**Amber R. VanHemel** (February, 2020) Spatial Variance of Peat Subsidence in Southeast Asia by Land Use

#### Enrique Velez Lopez

(February, 2020) (See also S.M., Course XXII) Is Embedding the Reactor Building Below Grade a Cost-Effective Proposition?

**Eric Wong** Multi-Objective Exploration of Photovoltaic Green Roof Design

#### Edmundo Rodolfo Zambrano

Proposed North-South Rail Link Tunnel in Boston and its Structural Effect on an Existing Highway Bridge

#### Master of Science in Civil and Environmental Engineering

Course I Department of Civil and Environmental Engineering

#### Audrey Bazerghi

(See also M.B.A., Course XV) Inventory Modeling for Active Pharmaceutical Ingredient Supply Chains

Katerina Boukin Improving the South Boston Rail Corridor

#### Angela Marie Cacciola

(September, 2019) Are PCBs in Phytoplankton and Zooplankton at Equilibrium with the Water in Which They Live?

Shouvik Das (See also M.B.A., Course XV) Multi-Echelon Supply Chain Design for Amazon Private Brands

#### Monica Francesca Harnoto

(See also M.B.A., Course XV) Value of Distribution-Level Reactive Power for Combined Heat and Power Systems

#### Nalaka Kanishka Bandara Kahawatte

(See also M.B.A., Course XV) Digital Business Model Development and Validation for Real-Time Monitoring Solution for Electrical Power Transformers

#### Zihuai Liu

(See also M.B.A., Course XV) Artificial Intelligence Infrastructure into Material Attributes Insights

#### **Randall Chase Markham**

(See also M.B.A., Course XV) Reducing Inventory through Supply Chain Coordination in an Industrial Supply Chain

#### Michael Vincent Martello

Resilience of Rapid Transit Networks in the Context of Climate Change

#### Lorcan A. Murphy

(See also M.B.A., Course XV) Increasing E-commerce Distribution Center Capacity Through Slotting Strategy

#### Margaret Ellen Neff

(See also M.B.A., Course XV) Evaluating Modeling Techniques for Quantifying Production Risk in Contact Lens Manufacturing

#### Aramael Andres Peña-Alcántara

Tracking Engagement: A Machine Learning Framework for Estimating Affective Engagement

#### Hannah Michelle Phillips

(See also M.B.A., Course XV) A Data-Driven Approach to Continuous Improvement in Reverse Logistics

#### **Stephane Poulain**

(September, 2019) Bursting Bubbles and Water-to-airtransfer: Interplay between Underlying Physics and Microbial Contamination

#### James Clifford Rowe

(September, 2019) Heterogeneous Reaction of Benzo[a]pyrene with Hydroxyl Radical and Ozone Under Atmospherically Relevant Conditions: Kinetics and Product Analysis

#### Sama Taha

Effect of Nano Cellulose and Nano Carbon Black on Cement Paste Microstructure

#### William Geoffrey Winegar

(See also M.B.A., Course XV) Standardization of New Product Introductions to Achieve Zero Defect Lines

# Master of Engineering in Advanced Manufacturing and Design

Course II-P Department of Mechanical Engineering

#### **Diarny Oliveira Fernandes**

(September, 2019) Design and Development of a Precision Packaging Stage and Master Control System for an Automated Vial Packaging Machine

#### Jessica Elizabeth Harsono

(September, 2019) Optimizing Distribution Center Packing Operations to Reduce Volumetric Shipping Costs

#### Siyang Liu

(September, 2019) Design and Development of an Automated Inspection System for Vials

#### **Efstratios Moskofidis**

(September, 2019) Design and Development of a Transfer System for an Automated Packaging Machine

#### Steven Adam Ratner

(September, 2019) Design and Development of a Placement Mechanism for an Automated Packaging Machine

#### Dehui Yu

(September, 2019) Evaluation of Outbound Operations Improvement Projects for Distribution Centers

#### Bowen Zeng

(September, 2019) Improved Packing Strategy for Distribution Centers to Reduce Freight Cost

#### Zhengyang Zhang

(September, 2019) Design and Development of an Automated Sorting and Orienting Machine for Vials

#### Master of Science in Mechanical Engineering

Course II Department of Mechanical Engineering

#### **Robert James Addy**

(See also M.B.A., Course XV) Cost of Complexity: Mitigating Transition Complexity in Mixed-Model Assembly Lines

Abdulmohsen Sulaiman Alowayed (September, 2019) Design of a Small-Scale and Off-Grid Water Desalination System Using Solar Thermal Heating and Mechanical Vapor Compression

#### **Ankur Mukesh Amlani** (See also M.B.A., Course XV)

(See also M.B.A., Course XV) Floor Entry Task Prioritization for Highly Automated Fulfillment Centers

#### Graham Philip Arrick

Delivery of Large-molecule Therapeutics via Jetting in the Gastrointestinal Tract

#### Kwabena K. Arthur On the Use of Prior Knowledge in Deep Learning Algorithms

Andrew Ryan Bader Biomaterials for Non-Viral Delivery of Nucleic Acid Drugs

#### Jason Barnell Barker

(See also Naval E., Course II) Automated Decision Making for Operations within a Traffic Separation Scheme Using MOOS-IvP

#### **David Paul Baxter**

(See also Naval E., Course II) Toward Robust Active Semantic SLAM via Max-Mixtures

John Harry Bell IV A Two-Motor Actuator for Legged Robotics Applications

#### Dextina A. Booker

(See also S.M., Engineering and Management) The Future of Fashion & Human Gesture Control: Exploration of a Wearable Communication Device for Sign Language Speakers

#### Audrey N. Bosquet

Body Scan Processing, Generative Design, and Multi-Objective Evaluation of Sports Bras: A New Design Strategy

#### Casey Alex Boyle

(See also M.B.A., Course XV) Process Enablers for Successful Reverse Engineering inside Large Organizations

#### Austin R. Brown

Novel Magnet Structures for Mechanically Robust Linear Motors

#### Steven Burcat

(February, 2020) Design and Evaluation of an Abrasive Saw Kickback Machine

#### **Caitlin Mary Butala**

(See also M.B.A., Course XV) Connected Factory: Real Time Data Analysis for Manufacturing Efficiency

#### Daniel A. Carballo

(February, 2020) Visual Navigation for Dynamic Quadruped Robots

# Alexis-Tzianni Charalampopoulos

(September, 2019) Machine Learning Non-local Closures for Turbulent Anisotropic Multiphase Flows

#### Yasmin Chavez

System Identification and Control of a Miniature External Mechanical Vibration Device towards Clinical Ultrasound Shear Wave Elastography

#### Hongling Chen

(See also S.M., Engineering and Management) A Vascular Imaging System for Longitudinal Registration and Mapping of Superficial Vessels with Quantitative Analysis

## Pin-Yi Chen

(See also S.M., Course VI) Resource Competition in CRISPR-Mediated Gene Regulation

#### Yudong Chen

(September, 2019) Water Splitting For Hydrogen and Syngas Production over a Novel Bi-layer Perovskite Membrane

#### Brendon W. Chiu

(See also M.B.A., Course XV) Additive Manufacturing Applications and Implementation in Aerospace

#### Jeffrey Bowen Chu

(See also M.B.A., Course XV) Investigating the Feasibility and Impact of Integrating Wire-Arc Additive Manufacturing in Aerospace Tooling Applications

#### **Donald Mateo Coates**

(See also M.B.A., Course XV) Integrating Agile within Complex Hardware Development via Additive Manufacturing

#### Alban C. Cobi

A Suction-Based Reversible Attachment and Locomotion Mechanism for an Underway Vessel Hull Cleaning and Inspection Robot

#### Ellen Coleman

(See also M.B.A., Course XV) Establishment of a Novel *Pichia Pastoris* Host Production Platform

#### Julia Elizabeth Cumming

(See also S.M.(N.A.M.E.), Course II) The Practicality of Adaptable Geometry Centrifugal Pumps in U.S. Navy Systems

#### Lea A. Daigle

(See also M.B.A., Course XV) Organizational Architecture Design and Assessment of Statistical Feasibility for FSDA Implementation in an Airplane Subassembly

#### Kyle Ricardo Danner

(See also M.B.A., Course XV) Utilizing Automated Inspection to Identify Surface Quality Defects within the Automotive Body Assembly Process

#### Fatima Zahraye Diallo

(See also M.B.A., Course XV) Using Discrete-Event Simulation to Increase System Capacity: A Case Study of an Assembly Plant

#### **Gregory Dreifus**

(February, 2020) Analysis of Tool Path Optimization in Large Scale Additive Manufacturing

#### Huifeng Du

Finite Element Analysis of Adhesive Contact Interface in Continuous 3D Printing

#### Raz Elhassid

(February, 2020) (See also S.M.(N.A.M.E.), Course II) Experimental Verification of Biomimetically Designed Ventral Fins for AUVs

#### Lindsay M. Epstein

Bi-Modal Hemispherical Sensors for Three Axis Force and Contact Angle Measurement

#### James Gabbard

(February, 2020) An Immersed Interface Method for Incompressible Flow with Moving Boundaries and High Order Explicit Time Integration

#### **Brian Gabriel Gaudio**

(See also M.B.A., Course XV) Assessing the Impact of Historical Operational Data from Complex Assets on Predictive Maintenance Models

#### Kaitlyn Elizabeth Gee

Numerical Tools for Rate-Cost-Quality Analysis of Laser-Based Additive Manufacturing

#### Noa Ghersin

(See also M.B.A., Course XV) Improving Asset Utilization and Manufacturing Production Capacity Using Analytics

#### Nigel Min Feng Goh

(See also M.B.A., Course XV) Applications of Risk Pooling for the Optimization of Spare Parts with Stochastic Demand Within Large Scale Networks

#### Fiona R. Grant

(September, 2019) Development and Validation of a Systems-level Cost Optimization Tool for Solar-powered Drip Irrigation Systems for Smallholder Farms

#### Luke A. Gray

Sequestering Floating Biomass in the Deep Ocean: "Sargassum Ocean Sequestration of Carbon" (SOS Carbon)

#### Rui Guo

(February, 2020) Single-Component Li<sub>2</sub>O Solid Electrolyte Interphase on Lithium: Probing Transport Properties in Battery Environments

#### Stephen Carrol Guth

(September, 2019) An Exploration of Data-Driven Techniques for Predicting Extreme Events in Intermittent Dynamical Systems

#### Rabab Haider

(February, 2020) Optimal Coordination of Distributed Energy Resources in Smart Grids Enabled by Distributed Optimization and Transactive Energy

#### Charles Hayden Hasenbank

(See also Naval E., Course II) The Design, Feasibility and Cost Analysis of Sea Barrier Systems in Norfolk, Virginia and the Comparative Cost of Shoreline Barriers

#### Alexander R. Hattori

Design of a High Torque Density Modular Actuator for Dynamic Robots

#### **Denton Xiang He**

(See also M.B.A., Course XV) Distribution and Replenishment Optimization between Locations of High and Low Real Estate Cost

#### Qi He

3D Reconstruction of Human Body via Machine Learning

#### Julian Heidenreich

(February, 2020) On the Potential of Convolutional Neural Networks for Estimating the Structural Response of Two-Material Structures

#### Emily Jane Hsu

(See also S.M., Engineering and Management) Design of a Measurement Device for Bread Dough Proofing

#### Rishabh Ishar

(February, 2020) Estimation of Precursors for Extreme Events Using the Adjoint Based Optimization Approach

#### Shahrin Jamila Islam (September, 2019)

Engineering Improvements for Epicardial Drug Delivery Systems

Yohan M. John (September, 2019)

Observability Analysis of Power Distribution Systems with Distributed Energy Resources Using Correlational Measurements

## **Austin Robert Jolley**

(See also Naval E., Course II) Design, Construction, and Analysis of a Modular Ship Model and Open-Source Autonomous Surface Vehicle

## **Kimberly Jung**

Exploring Low-Cost Deep Ocean Sensing Utilizing Undersea Cable Networks

## Ravitej Reddy Kanapuram

(September, 2019) (See also M.B.A., Course XV) Using Data Science and Model Based Systems Engineering to Design and Operate Production Systems

## Ha Eun David Kang

Design of Anti-biofouling Lubricant-Impregnated Surfaces (LIS) Robust to Cell-growth-induced Instability

## Bobak Toussi Kiani

Quantum Artificial Intelligence -Learning Unitary Transformations

## **Stephen Bradley Kidwell**

(See also S.M.(N.A.M.E.), Course II) Shipboard Fault Detection, Load Transient Exploration, and Power Simulation

## Hyungseok Kim

Development of a Hydrogel-based Biocompatible Platform for Studying Metabolic Interactions between Algae and Bacteria

## Sangwoon Kim

Model-free Tracking Control of an Optical Fiber Drawing Process using Deep Reinforcement Learning

## Miranda P. Kotidis

(September, 2019) Experiments with Impulsive Motion of a Foil to Generate Large Lift and Thrust Forces

### **Rebecca Ann Kurfess**

(September, 2019) A Thermally-Driven Design Methodology for Large-Scale Polymer Additive Manufacturing Systems

## Jordan Riley Landis

(See also M.B.A., Course XV) Benchmarking Environmental Efficiency of Garment Factories to Understand the Value of Real-Time Environmental Data

## Alina Dale LaPotin

(September, 2019) Multi-Stage Adsorption-Based Atmospheric Water Harvesting

## Logan Patrick Leahy

Estimating Output Torque via Amplitude Estimation and Neural Drive: A High-Density sEMG Study

## Sungkwon Lee

(September, 2019) Flow Optimization of Ventricular Catheters for Shear Stress-induced Death of Astrocytes

## Anne-Claire Elisabeth Marie Le Henaff

(September, 2019) Time-Variant Solar-Powered Electrodialysis Reversal Desalination for Affordable Off-Grid Clean Water Supply

## Victor Julio Leon

(September, 2019) Self-propulsion of Small Droplets on Thin Liquid Films

## Paul Lilin

Drying of Colloidal Suspension Drops: Pattern Formation and Mechanical Deformation

## Jing Lin

(February, 2020) Minimum-Correction Second-Moment Matching: Theory, Algorithms and Applications

## Muyuan Lin

(February, 2020) Deep Learning-Based Approaches for Depth and 6-DoF Pose Estimation

## Sandra Qi-Jun Liu

Vision-Based Proprioception of a Soft Robotic Finger with Tactile Sensing

## Kuangye Lu

Graphene-assisted Spontaneous Relaxation and Direct CVD Growth of Graphene on III-V Substrate

## Shirley Suet-Ning Lu

Design of Dynamically Controlled Desktop Fiber Accumulator with Tension Feedback as Part of Smart Manufacturing Educational Kit

### Anthony Douglas Macaluso

(See also S.M.(N.A.M.E.), Course II) Fuel Tank Corrosion Impacts on Future Fleet Readiness

## **Caroline Taylor McCue**

(September, 2019) Particle Assisted Protein Crystal Nucleation as a Protein Purification Platform for Pharmaceutical Manufacturing

## **Erich Paul Meinig**

(September, 2019) An Exploration of Modality Matched Mechanotactile Feedback via a Soft Actuator for Use in Prosthetic Devices

## Dante Edward Montgomery

(See also M.B.A., Course XV) Project-Based Manufacturing: An Approach for Quote Development

## John Willard Montgomery III

Calibrating Schlieren Imaging for Understanding Local Film Deformation for a Range of Wetting and Intrusions in Soap Films

## Moses Chong-ook Nah

Dynamic Primitives Facilitate Manipulating a Whip

## **Gregory Thomas Nannig**

(February, 2020) Using Image Processing Methods for a Radar Estimate of Marine Vehicle Odometry

## Hans Antoon Nowak II

(See also M.B.A., Course XV) Strategic Capacity Planning using Data Science, Optimization, and Machine Learning

## Elliot D. Owen

(February, 2020) Design of a Low-Cost High-Performance Flexural Six Degree-of-Freedom Positioning Stage

## Aniket Sanjay Patankar

(February, 2020) Numerical Simulation of Heavy Oil Droplets Mixing in Supercritical Water at Conditions Relevant to Supercritical Water Heavy Oil Upgrading Nina T. Petelina (September, 2019) Exploring the Role of Damping in a Passive Prosthetic Knee through Modeling, Design, and Testing

#### Danyal Rehman

Monovalent selective electrodialysis: optimizing energetics for desalination and mineral recovery

#### Taylor Kirstyn Robinson

(See also M.B.A., Course XV) Leveraging Flexible Manufacturing in Streamlining New Product Launch Processes

#### Michael Columbus Ross

(See also M.B.A., Course XV) Reducing Variations in a Highly Constrained Environment in Order to Increase Production Capacity

#### **Tikhon James Ruggles**

(See also Naval E., Course II) Electronics First: Development of a Basic Electronics Course of Study for Naval Engineers

## Jana I. Saadi

(February, 2020) Motivating Sustainable Behavior Through Cognitive Interventions in Product Design

#### **Ryan Joseph Sandzimier**

A Data-Driven Approach to Bucket-Filling Control for Autonomous Excavators

#### William James Sawyer

(February, 2020) Toward Improved Manufacturing of Carbon Nanotubes by Microplasma Synthesis of Catalyst Nanoparticles

## Aaron Paul Schlenker

Integrated Optimization of Thermoelectric Systems

### **Carolyn Sheline**

(September, 2019) Lowering the Cost of Solar-Powered Drip Irrigation Systems for Smallholder Farmers Through Systems-Level Modeling, Optimization and Field Testing

## Brian Asanuma Stanfield

(See also Naval E., Course II) Incorporating Contact Management and Marine Dynamics in Decentralized Auction Bidding for Autonomous Surface Vehicles **Tingyu Su** Properties of Off Stoichiometric Yttrium Iron Garnet

Wenhui Tang Collective Cellular Behavior on Curved Surface

Adriane Ann Turner (See also M.B.A., Course XV) Evaluation of Automated Storage and Retrieval in a Distribution Center

## Juliet Wanjiru Wanyiri

(See also S.M., Engineering and Management) Structural and Aesthetic Design Applications of Flexible, Thin-film Solar Cells to Power Off-Grid Tensile Structures

**Benjamin Stone Weinreb** A Novel Magnetically Levitated Interior Permanent Magnet Slice Motor

## Aaron Michael West, Jr.

Towards Non-Invasive Measurement of Human Manipulation during a Complex Physical-Interaction Task: Wire-Harnessing

## David Travis Kent Woodruff

(See also M.B.A., Course XV) Stepping Toward a Smarter Factory at Canam

#### Sagar Pandey Yadama

(See also M.B.A., Course XV) Data Driven Risk Assessment for Turbine Engine Programs

#### Paige Denise Youngerman

(See also M.B.A., Course XV) Impact of Part Proliferation on a High Mix Low Volume Manufacturing Environment

## Wang Zhang

(See also S.M., Course VI) Modeling Internal Combustion Engine Three-Piece Oil Control Ring Coupling Reduced Order Oil Transport Based on Neural Network

#### **Raphael Matan Zonis**

Development of an Automated Microfluidic System for the Loading and Unloading of Cryoprotectants from Mammalian Oocytes

## Master of Science in Naval Architecture and Marine Engineering

Course II Department of Mechanical Engineering

## Julia Elizabeth Cumming

(See also S.M., Course II) The Practicality of Adaptable Geometry Centrifugal Pumps in U.S. Navy Systems

## Raz Elhassid

(February, 2020) (See also S.M., Course II) Experimental Verification of Biomimetically Designed Ventral Fins for AUVs

#### Stephen Bradley Kidwell

(See also S.M., Course II) Shipboard Fault Detection, Load Transient Exploration, and Power Simulation

## Anthony Douglas Macaluso

(See also S.M., Course II) Fuel Tank Corrosion Impacts on Future Fleet Readiness

## Master of Science in Materials Science and Engineering Course III

Department of Materials Science and Engineering

#### Victor Kenneth Champagne III

(September, 2019) Energy Dissipation in Shape Memory Zirconia Particles, Packings, and Composites

#### **Gautham Muthusamy**

Effect of Cooling Rate During Solidification of Aluminum-Chromium Alloy

## Jee Soo Yoo

(September, 2019) Computational Study on Controlling the Optical Properties of Solar Thermal Fuels

# Master of Engineering in Electrical Engineering and Computer Science

Course VI-P Department of Electrical Engineering and Computer Science

Lena A. Abdalla

(February, 2020) Classification of Computer Programs in the Scratch Online Community

Aradhana Adhikari 3D Visualization Tool for Custom Electronics Fabrication Using Laser Cutter

Walaa M. Alkhanaizi A Sleep Mask for Conducting Sleep Studies

**Julian A. Alverio** (February, 2020) Zero Shot Learning Robotic Tasks with Language Integration

David James Amirault (See also S.B.,Course VI-3) Partition WaveNet for Deep Modeling of Automated Material Handling System Traffic

**Christopher Z. Au** Characterization of Deep Neural Network Feature Space For Inverse Synthetic Aperture Radar Automatic Target Recognition

**Emmanuel M. Azuh** (September, 2019) Towards Bilingual Lexicon Discovery From Visually Grounded Speech Audio

Annamarie E. Bair (September, 2019) Molecular Graph Self Attention and Graph Convolution for Drug Discovery

**Brandon J. Baraban** (See also S.B., Course VI-3) Learning Rules for Task and Motion Planning

**Sravya M. Bhamidipati** (September, 2019) Examining Approaches to Quantify the Role of People, Policy, and Process in Cyber Risk Management

#### Nikhil Bhatia

Using Transfer Learning, Spectrogram Audio Classification, and MIT App Inventor to Facilitate Machine Learning Understanding

Sanchit Bhattacharjee (September, 2019) Integrating SLAM-DUNK and Variable Rate Particle Observers for Fast Multi-Hypothesis SLAM

Angie W. Boggust Unsupervised Audio-Visual Learning in the Wild

**Jacqueline M. Bredenberg** Optimizations for Performant Multiverse Databases

Nithin Buduma Identifying Relevant Molecular Substructures for Property Prediction

**Rares-Darius Buhai** Learning Restricted Boltzmann Machines with Few Latent Variables

Katherine A. Camenzind Non-Contact Voltage Monitoring of Three-Phase Power Cables

**Giulio Capolino** Methods to Analyze Spatiotemporal Dynamics of Electrochemically Recorded Striatal Dopamine

Alan E. Casallas (September, 2019) Contactless Current and Voltage Detection Using Signal Processing and Machine Learning

**Christos Nestor Chachamis** A Dimension Reduction Technique to Preserve Nearest Neighbors on High Dimensional Data

Julian A. Chacon-Castaño (February, 2020) Exploration of Alternative Algorithms for Multi-Channel Acoustic Echo Cancellation

Adelaide W. Chambers Longitudinal VoxelMorph: Spatiotemporal Modeling of Medical Images

Raphael Chang (February, 2020) Significance of Omnidirectional Fisheye Cameras for Feature-based Visual SLAM Shivani Chauhan (September, 2019) A Mobile Platform for Non-invasive Diabetes Screening

Alex L. Chen JiboChat: Interactive Chatting Through a Personal Robot

Brian Chen RiffShuffle: A Flexible Interface for Interactive Automatic Harmonization

**Bryan Chen** Relieving Label Requirements Through Weakly Supervised Learning

Daibo Chen (September, 2019) RF Energy Harvesting Using Carbon Nanotube Components

Run Chen Recovery of Functional Projections Through Unsupervised Learning

Alan D. Cheng Low Power Time-of-Flight Imaging for Augmented Reality

**Rayden Yongxiang Chia** SPAR: A Robust SDN-Based Architecture for Autonomous Network Active Defense

**Kevin K. Cho** (September, 2019) Three Dimensional Editor for App Inventor

**Lauren W. Clayberg** Web Element Role Prediction from Visual Information Using a Novel Dataset

Zachary L. Collins Active Database Interface for Video Search

**Osmany L. Corteguera** Airborne Collision Avoidance with Three-Dimensional Policy

Yang Dai (September, 2019) Intergrated Multiparametric Deep Spatial Phenotyping of Mouse Models of Lung Adenocarcinoma

Sourav Das (September, 2019) Predicting Unknown Adverse Drug Reactions Using an Unsupervised Node Embedding Algorithm Leo Ramón Nathan de Castro (February, 2020) Practically Efficent Multi-Party Computation Protocols from Homomorphic Encryption

**Miguel Ángel del Río Fernández** (February, 2020) Structure and Geometry in Sequence-Processing Neural Networks

**Elizabeth A. DeTienne** Multi-Digit Processing and Contextualized Analysis on the Symbol Digit Test

Jared J. Di Carlo (February, 2020) Software and Control Design for the MIT Mini Cheetah Quadruped Robot

**Emily H. Do** (September, 2019) An Entropy-based Approach to Network Attack Classification with Deep Neural Network

Jamell A. Dozier (February, 2020) Emergent Patterns of Task-Specific Neurons in Deep Neural Networks

**Sabrina M. Drammis** (February, 2020) Understanding the Role of Striosomes in Learning a Decision-making Task

**Rogers S. Epstein** Local Access to Sparse Connected Subgraphs Via Edge Sampling

**Ivan Tadeu Ferreira Antunes Filho** (September, 2019) SAT Infrastructure

**Roberto Daniel Filizzola Ortiz** Robust Algorithms for Analysis of Traveling Wave Motions of the Tectorial Membrane

Sean Cameron Burrows Fraser Computing Included and Excluded Sums Using Parallel Prefix

**Allison Fu** A Vision-Language Model for Translation

Paolo Y. Gentili (September, 2019) Active Learning Using Meta-Learned Priors Sydney Marie Gibson Waddle: A Proven Interpreter and Test Framework for a Subset of the Go Semantics

Leah G. Goggin (September, 2019) Runtime Execution Tracing and Alignment with PANDA

**Zoë P. Gong** Promoting Group Self-Facilitation in Online Video Conferences

Udgam Goyal (February, 2020) Leveraging Machine Learning to Predict Playcalling Tendencies in the NFL

Liam M. Green Electronics for Flow Through Electrode Capacitive Desalination

Alexander G. Grossman (See also S.B., Course VI-2) Phase Correction in Long-Range Temperature Forecasting

**Dylan E. Grullon** (September, 2019) Disentangling Time Constant and Time Dependent Hidden State in Timeseries with Variational Bayesian Inference

Winter J. Guerra (September, 2019) Photorealistic Sensor Simulation for Perception-driven Robotics using Virtual Reality

Michael H. Gump Unsupervised Methods for Evaluating Speech Representations

Hairuo Guo (September, 2019) Steps Towards Proof Construction Using Reinforcement Learning: Environments and Models for Hypothesis-Posing as Subtask Creation

Arjun R. Gupta (See also S.B., Course VI-3) Automated Neural Network Output Monitoring

**Driss Hafdi** (September, 2019) Mixed Precision Architecture for Flexible Neural Network Accelerators **Ruochen Hao** Efficient Exploration of Reinforcement Learning in Non-Stationary Environments with More Complex State Dynamics

**Joshua K. Hellerstein** RF-Based Wireless Detection and Monitoring of Human Itch

**Trevor F. Henderson** (September, 2019) Information-Theoretic Robotic Exploration

**Rawn T. Henry** A Framework for Computing on Sparse Tensors Based on Operator Properties

**Timothy G. Henry** (February, 2020) Generalization of Deep Neural Networks to Unseen Attribute Combinations

John Heyer Inference of Point Sources from NuSTAR X-Ray Observations Using Probabilistic Catalogs

**Helen W. Ho** Neural Physics Simulation through Volumetric Reconstruction

Felipe Alex Hofmann Tracer: A Machine Learning Approach to Data Lineage

**Christie Hong** Ecological Values-Based Recommender System for Physical Locations

**Jeffrey H. Hu** (September, 2019) Scaling ADE20k: Cluster-based Approach for Large-scale Image Segmentation Collection

Matthew S. Hutchinson (See also S.B., Course VI-3) Applying High Performance Computing to Early Fusion Video Action Recognition

Mitchell D. Hwang (February, 2020) Temperature Prediction Using Thermal Fluctuations from Wireless Sensor Networks in Adaptive Filter Model

Sabrina Elizabeth Ibarra (September, 2019) Pipeline for Semi-automatic Quantification of Morphologic Heterogeneity iin Endothelial Cells

#### Shreyan Jain (See also S.B., Course VI-3) Developing a Cloud-Based Secure Computation Platform for Genomics Research

### Christina Xinyue Ji

(September, 2019) Modeling Progression of Parkinson's Disease

Yuge Ji (September, 2019) Cell Line Sensitivity to BCNU Damage

Magnus H. Johnson Deep Rigging: Automatic Character Skinning for Animation

Srinivas Kaza

(September, 2019) Differentiable Volume Rendering using Signed Distance Functions

Arjun Sunil Khandelwal (September, 2019) Learning Embeddingds

Houssam Kherraz Leveraging Dataset Examples for the Interpretation of Black-Box Deep Learning Models

**Bruke Mesfin Kifle** Experiential Ethics: Engagement in Computing Education

Alex H. Kimn A Syntactic Rule-based Data Synthesis Framework for Japanese GEC

Nicholas E. Klugman (February, 2020) Modeling and Design of Magnetic Flux Compression Generators

Alexander W. Knapp AirGuardian: A Parallel Autonomy Approach to Self-Flying Planes

Sean Ko Optimizing a Deep Learning Approach for Automatic Segmentations for White Matter Lesions

Isaac Kontomah (February, 2020) Towards Abstract Program Interpretation Using Encoder-Decoder Neural Networks

**Dimitrios Koutentakis** (February, 2020) Modeling Human Driving Behavior **Severyn Kozak** Understanding and Eliminating Software Performance Variability

Danielius Kramnik (February, 2020) Scaling Trapped-Ion Quantum Computers with CMOS-Integrated State Readout

Agni Kumar (See also S.B.,Course VI-3) Learning Infection Influence Using Self-Excitatory Temporal Point Processes

Alex Licari LaGrassa (September, 2019) Selecting Appropriate Reinforcementlearning Algorithms for Robot Manipulation Domains

Jason Lam (See also S.B.,Course VI-3) Applying Sampling and Predicate Pushdown in an Interactive Data Exploration System

**Quang Huy Le** (February, 2020) GAN Mask R-CNN: Instance Semantic Segmentation Benefits from Generative Adversarial Networks

Allen J. Lee Interfaces for Exploring Human Memorability and Cognition

**Chungmin Lee** Question Generation Workflow: Incorporating Student-generated content and Peer Evaluation

Elizabeth S. Lee (September, 2019) A Two-fold Validation of the Sensitivity of a Coaxial Probe of Measuring Dielectric Permittivity in a Multilayered Tissue Model, Using Finite Element Method Simulation and Tissue Phantom Measurements

FengPing Angela Leong (February, 2020) Developing a Simulator to Aid in the Design of a Safety Interlock for Self-Driving Cars

Jiahao Li (September, 2019) Color Reclamation for Heap Memory Coloring Scheme in PIPE Tagged-Memory Architecture **Rui Li** (February, 2020) G-Network for Outcome Prediction Under Dynamic Intervention Regimes

Christina C. Liao Software Pipeline for End- to- End Fabrication of Functional Devices

**Jing C. Lin** Motion Aware Depth Completion for Aerial Drones with Deep Neural Networks

Alexander H. List (September, 2019) Assessing Multi-rotor UAV Controllability in Low Altitude Fine-Scale Wind Fields

Wilson Louie Validation of a Novel Systematic Computational Workflow for CRISPR/ Cas9-Induced Theraputic Exon Skipping

James Peter Thomas Lovejoy An Empirical Analysis of Chain Reorganizations and Double-Spend Attacks on Proof-of-Work Cryptocurrencies

Sophia Y. Luo (See also S.B.,Course VI-3) Identifying Investors with Sentiment-Based Investment Strategies and Predicting Their Trading Behavior

Alexander J. Lynch Framework for the Distributed Execution of Behaviors in Swarms of Autonomous Drones

**Israel R. Macias** Verity Ledger: Improving Data Quality and Ensuring Data Authenticity in Publicly-Built Open Datasets

**Jennifer Lissette Madiedo** How Will it End? OPERA As an Approach to Prediction

**Cheahuychou Mao** (September, 2019) Understanding Language by Imagining Possible Worlds

**Elizabeth E. Martin** (February, 2020) Determining Patterns of Cancer Drug Resistance from Rapid Autopsy Patients

**Jennifer A. McCleary** (February, 2020) Learning Risk Models for Pancreatic Cancer from Electronic Health Records Haripriya P. Mehta (See also S.B., Course VI-2) Secure Inference of Quantized Neural Networks

**Jesse M. Michel** Sensitivities for Guiding Refinement in Arbitrary-Precision Arithmetic

**So Yeon Min** Towards Knowledge-Based, Robust Question Answering

John Mofor (September, 2019) PyMedServer: A Server Framework for Mobile Data Collection and Machine Learning

Suzanne A. Mueller (February, 2020) Sparse Tensor Transpositions in the Tensor Algebra Compiler

**Ayrton D. Munoz** (September, 2019) Development of Vertical Bulk Gallium Nitride Power Devices

Ajinkya Kishore Nene (See also S.B., Course VI-3) Deep Learning Approaches to Universal and Practical Steganalysis

Rupayan Neogy Synchronized Vega-Lite: Designing Collaborative Visualization

Anelise P. Newman Human-Computer Perception: Modeling Visual Perceptual Attributes

Hoang Nguyen Modeling Acoustic Cues to Distinctive Features in a Lexical Speech Analysis System

**Lucas D. Novak** Using Smart Systems to Incentivize Sustainable Behaviors of Individuals

**Cattalyya Nuengsigkapian** ChromoUpdate: Optimization Technique for Controlling Color-Changing Materials

**Domenic Jeffrey Nutile** Using Profiling to Improve the Performance of Automatically Parallelized Programs

Kwabena A. Ofori-Atta Preliminary Evaluation of a Mobile Platform for the Non-Invasive Screening and Prevention of Diabetes **Inioluwa A. Oguntola** (September, 2019) Deep Learning in the TeleICU Environment

Temitope Oluwatosin Olabinjo Click-based Ultrasonic Gesture Recognition

Suzanne O'Meara (See also S.B., Course VI-1) Development of a Switched-Capacitor Multi-Level Inverter for EAD Applications

Adedotun J. Oseni-Adegbite Automatic Analysis of Meeting Conversations

Victoria Song Ouyang (February, 2020) Scalable Integrated Screening Tools for Cardiovascular Disease

Mira Anita Partha A Novel Method for Multilevel Autonomous Clustering (MAC) for Anomaly Detection in Distributed Systems

Aman S. Patel StructureQTL: Novel QTL to Associate SNPs and Neighborhood Regulatory Structure

Jason G. Paulos (See also S.B., Course VI-3) Investigating Decentralized Management of Health and Fitness Data

Anthony Bo Peng Light Source Relighting for Indoor Scene Photos with Deep Neural Networks

**Ignacio Perez Bedoya** (See also S.B.,Course VI-2) Robotic Grasping using POMDPs and Machine Learning

Mai Phuong Pham Machine Comprehension for Clinical Case Reports

**Carla N. Pinzón** (February, 2020) Comparison of Power Electronics Inverters for Underwater Applications

Srijith Sreekumar Poduval (See also S.B., Course VI-3) Simulating Income Segregation Through Behavioral Adjustments Using Mobile Location Data Smriti Pramanick (September, 2019) Using Dynamic Time Warping to Improve the Classical Music Production Workflow

**Ryan T. Prinster** (September, 2019) Modeling Rats Learning Compositional Tasks

Korrawat Pruegsanusak Understanding Drivers' Risk Behaviors from Dashcam Videos

Sebastian Andrés Quilter Software Design for Dual-Computer Configuration of Aerial Robots

**Abraham Quintero** (September, 2019) REACT: Risk Evaluation Assessment & Cooperation Terminal

**Meena S. Rajan** (February, 2020) Learning and Analysis of Matrix and Striosomal Cell Activity to Predict Mouse Behavior in 'T' Maze

Archana Ram (February, 2020) Diverse Primary and Secondary Structural Features are Associated With Y Complex-Dependent mRNA

Maturation in B. subtilis

Sunayana Rane (See also S.B., Course VI-3) Learning with Curricula for Sparse-Reward Tasks in Deep Reinforcement Learning

**Kavya Ravichandran** (See also S.B., Course VI-2) A Sublinear Time Algorithm for Testing Heavy-Tailed Distributions

Justin P. Restivo (February, 2020) A Zero Kernel Operating System: Rethinking Microkernel Design by leveraging Tagged Architectures and Memory-Safe Languages

Valerie G. Richmond "Certified Control" Safety Architecture for Autonomous Vehicles: Applications with LiDAR

Rodrigo I. Ruiz (February, 2020) Geometric Matrix Completion with Graph Attention Networks Wesley J. Runnels Incorporating Automated Feature Engineering Routines into Automated Machine Learning Pipelines

**Basil N. Saeed** Learning Directed Graphical Models with Latent Variables

**Tossaporn Saengja** Large-Scale Network: A Scalable Learning Algorithm and Visualization

Janelle C. Sands Efficient Optical Music Recognition Validation Using MIDI Sequence Data

Nilai M. Sarda (See also S.B., Course VI-3) Towards Anomaly Detection in Accelerator Physics

Sarbari Sarkar (See also S.B., Course VI-3) Gaze-Tracking Analysis for Cognitive Screening and Assessment

Martin F. Schneider Data-Efficient Reinforcement Learning Through World-Modeling and Meta-Learned Exploration Strategies

**Ryan Michael Senanayake** (February, 2020) A Unified Iteration Space Transformation Framework for Sparse and Dense Tensor Algebra

Faysal Shair (September, 2019) Improving Piezoelectric Energy Harvesting Power Bandwidth with the Bias-flip Method

Ayush Sharma AIKIDO: Toward Straggler Mitigation within Distributed Machine Learning in Data Centers

**Andrew L. Shea** Patient Clustering Using Electronic Health Records

Luke Shimanuki (See also S.B.,Course VI-3) Motion Planning under Obstacle Uncertainty

**Michal M. Shlapentokh-Rothman** Cyber Threat Hunting

Yasmin H. Siahpoosh Investigating Mechanisms of Biophysical Diversity Between Phasic and Tonic Motor Neurons **Claire M. Simpson** (September, 2019) Perturbations in Kinase Signaling and Gene Expression Networks in Human Disease

Anna Sinelnikova Cues to Comparison Classes in Child-Directed Language

Aaron J. Sipser Video Ingress System for Surveillance Video Querying

**Chandler B. Squires** (September, 2019) Casual Structure Learning

Keren Sarah Starobinski (February, 2020) Predicting Medicine Inpatients' Discharges at Massachusetts General Hospital

**Zygimantas Straznickas** Verified Cryptographic Bootloader in Coq

**Rishi S. Sundaresan** (See also S.B., Course VI-3) Pixel-Based Object Motion Detection and Tracking with a Moving Camera

Jennifer F. Switzer Preventing IPC-Facilitated Type Confusion in Rust

Adrian Reginald C. Sy A Fast 2D Packing Procedure for the Interactive Design and Preparation of Laser-Cut Objects for Fabrication

**Melinda Dora Szabo** Adaptive Gain Spatial Receiver for Wide Dynamic Range Communication Links

**Tiffany L. Tang** (September, 2019) Security and Performance Analysis on Custom Memory Allocators

**Ertem Nusret Taş** (September, 2019) Coflow Scheduling in Data Center Networks

**Evan S. Tey** Unsupervised Generative Models for Stellar Spectra

**Tristan Andrew Fraser Thrush** (September, 2019) SAL: A Self-Aware Learning System **Sunny Tian** (See also S.B., Course VI-3) Integrating Discussion and Summarization in Collaborative Writing

**Robert Hall Tran** (September, 2019) Online Prediction with Bike Sharing Systems

**Timothy F. Truong, Jr.** Interpretable Deep Learning Framework for Binding Affinity Prediction

**Andrew Yunta Tsai** Zorro: A Model Agnostic System to Price Consumer Data

**Christine M. Vonder Haar** (February, 2020) Understanding Learner Engagement in Massive Open Online Courses

Vincent Charles Vostatek Predicting Factors that Affect Student Performancein MOOC and On-Campus Computer ScienceEducation

Austin T. Wang (February, 2020) Allele-Specific QTL Fine-Mapping with Plasma

Austin Taylor Wang (See also S.B., Course VI-3) Real-time Computer-Aided Polyp Detection and Localization for Clinical Applications

Katherine Yuchen Wang (February, 2020) A Machine Learning Framework for Predictive Maintenance of Wind Turbines

Xiaomin Wang Exploring Automated Methods for Supporting Worker Reskilling

Ziheng Wang Automatically Optimizing Sparse Tensor Algebra Programs

Mattie F. Wasiak (See also S.B., Course VI-3) Leveraging Clinical Data to Optimize Oxygen Delivery to the Preterm Infant

**Tyler J. Wasser** Roboat Routing and Itinerary Planning for Tourists

**Kuo-An A. Wei** Identifying Non-Robust Features in Image Classification **Rebecca E. Weinberger** Development of a Co-Evolution Assistant to Limit Database Decay

Alyssa F. Weiss Developing Automated Tools to Analyze Synaptic Calcium Events Using Machine Learning Tools

Kevin Weng Examining Conversational Programming Design Needs with Convo, a Voice-First Conversational Programming System Using Natural Language

Malcolm X. Wetzstein (September, 2019) Custom and Interactive Environments in Starlogo Nova for Computational Modeling

Jordan M. Wick Using Existing Knowledge for Transfer and Regularization for Program Synthesis with Genetic Programming

Diana Wofk Fast and Energy-Efficient Monocular Depth Estimation on Embedded Systems

**Kifle H. Woldu** Encouraging GAN Diversity via Evolutionary Computing

Albert Wu Sampling-Based Planning for Hybrid Systems via Reachability Guidance and Policy Approximation

Menghua Wu Few-Shot Text Classification with Distributional Signatures

Nicholas T. Wu (February, 2020) Inductive Logic Programming with Gradient Descent for Supervised Binary Classification

Shang-Yun Wu Regular Graphical Pattern Detection and Its Applications

Aaron W. Wubshet Investigation of a USRP Platform for Quantum Sensing and Control

Wings T. Yeung (February, 2020) Characterization of Nanophotonic Grating Structures **Grace Qingyang Yin** Parallel Exception Handling in Cilk

Katherine W. Young (February, 2020) Dynamic Treatment Regimes for Congestive Heart Failure: A Neural Fitted Q-Iteration Approach

Justin K. Yu Identifying Outlier Opioid Consumption Using Machine Learning and Peri-Operative Data

**Gina Y. Yuan** (September, 2019) Scalable Fault Tolerance for High-Performance Streaming Dataflow

**Erica J. Yuen** Paper Dreams: Real-Time Collaboration with Machine Learning for Artistic Expression

Xavier Alexander Zapien Electrical System Design for Wafer-Like Satellite

Kevin Zhang (February, 2020) Tiresias: A Peer to Peer Data Science Marketplace

Mary Z. Zhong Teaching and Improving Code Review in the Classroom

Zachary J. Zumbo (February, 2020) Genetic Optimization Applied to Via and Route Strategy

## Master of Engineering in Computer Science and Molecular Biology

Course VI-7 Department of Electrical Engineering and Computer Science

**Priya P. Pillai** Accounting for Uncertainty: Robust Design Space Exploration and Optimization Master of Science in Electrical Engineering and Computer Science Course VI

Department of Electrical Engineering and Computer Science

Raj Agrawal

(February, 2020) Minimal I-MAP MCMC for Scalable Structure Discovery in Causal DAG Models

Ali Said Alrayes (See also M.B.A., Course XV) Transmission System Overvoltage Mitigation Through the Use of Distributed Generation (DG) Advanced Inverters

Nicolas S. Arango (February, 2020) Sequence-Phase Optimal (SPO)  $\Delta B_0$ Field Control for Lipid Suppression and Homogeneity for Brain Magnetic Resonance Spectroscopic Imaging

Alex Christopher Barksdale Lithium Extraction from Brines Using Ion Concentration Polarization

**Serena Lynn Booth** Explainable AI for Robot Teaching and Learning

**Dylan Maxwell Cable** Computational and Statistical Methods for Spatial Transcriptomics

**Francis Cangialosi** (September, 2019) Aggregate Internet Traffic Control

**Pin-Yi Chen** (See also S.M., Course II) Resource Competition in CRISPR-Mediated Gene Regulation

Nadiia Chepurko (February, 2020) ARDA: Automatic Relational Data Augmentation for Machine Learning

**Charles William Chimento III** (See also S.M., Technology and Policy Program) Innovation in the US Air Force

Chanyeol Choi

(September, 2019) Large-Scale Neuromorphic Computing Hardware for Analog AI Enabled by Epitaxial Random Access Memory Matthew Ruiyan Chua (September, 2019) Electroluminescence Characterization of Organometallic Perovskite Solar Cells

Rumen R. Dangovski Applied NLP Inspired by Fundamental Mathematics and Physics

Durgesh Das (See also M.B.A., Course XV) Assessing Sales Floor Capacity and Replenishment Strategy

Marc de Cea Falcó Milivolt Silicon Photonic Modulators for Cryogenic Applications

Hannah R. Diehl (February, 2020) Evaluating Summarization and Inference Techniques for High Energy Physics Applications

Jialin Ding Learning Multi-dimensional Indexes

**Mustafa Doğa Doğan** Identifying 3D Prints Using Slicing Parameters

Yilun Du Online Optimization with Energy Based Models

Lijie Fan Human Activity Analysis Using Radio Signals

Adam Joshua Fisch (February, 2020) Working Hard or Hardly Working: Challenges of Integrating Typology into Neural Dependency Parsers

**Joshua Samuel Fried** Overcoming Scalability Bottlenecks in Shenango

Austin James Gadient (February, 2020) Automatic Exploitation of Fully Randomized Executables

Mingye Gao Application of Graphene in Designing Tunneling Nanoelectromechanical Switches

#### Wei Gao

Integrated Perception, Planning and Feedback Control for Generalizable Robotic Manipulation **Ofer Grossman** Reproducibility and Pseudo-Determinism in Log-Space

Nava Haghighi (See also S.M., Engineering and Management) Self-Interfaces: Utilizing Real-Time Biofeedback in the Wild to Elicit Unconscious Behavior Change

Hao He (February, 2020) Deep Learning for Distributed Circuit Design

**Kyle Lee Hogan** (February, 2020) Security Analysis of Tor Over QUIC

Rachel Mara Holladay (September, 2019) Force-and-Motion Constrained Planning for Tool Use

Justin Tony Hou (September, 2019) Strong Coupling between Microwave Photons and Nanomagnet Magnons

Tzu Ming Hsu Automatic Longitudinal Assessment of Tumor Responses

Nathan Ray Hunt (February, 2020) Batch Bayesian Optimization

Mohamed Ibrahim Mohamed Ibrahim

(February, 2020) Chip-Scale Quantum Magnetometry via CMOS Integration with Diamond Color Centers

Siddhartha Jayanti Multiplayer Colonel Blotto Game

Yichen Jia (See also S.M.Arch.S., Course IV) Constructing Virtual Reality Exhibitions with Multimodal Interactions

### **Iksung Kang**

On the Use of Machine Learning for Obtaining the Inverse in the Coherent Modulation Imaging Scheme with Photon-Starved Inputs

Irene Agnes Kuang Equivalent-Charge-Based Optimization of Spokes-and-Hub Permanent Magnets for Hand-Held MR Imaging William Henry Kuszmaul Fair Buffer Management: Achieving Optimal Backlog in Multiprocessor Cup Games

**Christian Lee Lau** Very-Large-Scale-Integration of Complementary Carbon Nanotube Field-Effect Transistors

**Kyungmi Lee** Improved Methodology for Evaluating Adversarial Robustness in Deep Neural Networks

Lukas Lesina Debiasi (See also S.M.Arch.S., Course IV) Illuminating Preference: Rethinking Colored Lighting in Workplace Environments

**Peter Zhi Xuan Li** High-Throughput Computation of Shannon Mutual Information on Chip

**Tianhong Li** Human Sensing and Identification Using RF Signals

Yunzhu Li Learning Compositional Dynamics Models for Model-Based Control

Qianhui Liang (February, 2020) (See also S.M.Arch.S., Course IV) Machine Mediated Human Perception

**Yujun Lin** Mixed-Precision NN Accelerator with Neural-Hardware Architecture Search

**Zhijian Liu** Hardware-Efficient Deep Learning for 3D Point Cloud

Yiyue Luo

Discovering the Patterns of Human-Environment Interactions Using Scalable Functional Textiles

James Carter Minor Design and Fabrication of a Fully 3D Printed Light Sensor Array

Rishabh Mittal

(February, 2020) A Sampling Jitter Tolerant Continuous-Time Pipelined ADC

### Baichuan Mo

(See also S.M., Transportation) Network Performance Model for Urban Rail Systems

#### Andrew Robert Moorman

(February, 2020) (See also S.M.Arch.S., Course IV) Machine Learning Inspired Synthetic Biology: Neuromorphic Computing in Mammalian Cells

#### Zachary James Newman

A High-Bandwidth, Low-Latency System for Anonymous Broadcasting

Benny Siu Hon Ng (See also S.M., Technology and Policy Program) A Machine Learning Approach to Evaluating Renewable Energy Technology: An Alternative LACE Study

**Tin Danh Nguyen** Non-Nested Finite Approximations for

on SolarPhoto-Voltaic (PV).

Completely Random Measures

### Michael Karl Oberst

(September, 2019) Counterfactual Policy Introspection Using Structural Causal Models

#### **Moses Teddy Ort**

(February, 2020) MapLite: Autonomous Navigation in Rural Environments Without Detailed Prior Maps

#### Bora Ozaltun

(See also S.M., Technology and Policy Program) Learning from Supply Shocks in the Energy Market: Evidence from Local and Global Effects of the Shale Revolution

## Soyun Park

(February, 2020) Opportunities for Automating Email Processing: A Need-Finding Study

#### **Kaidong Peng**

Quantum Efficiency of Josephson Traveling Wave Parametric Amplifiers with Many-Mode Processes

### James Patrick Peraino

(See also S.M.Arch.S., Course IV) Architectural Epidemiology: A Computational Framework

## Joshua Andrew Perozek

(February, 2020) Vertical Gallium Nitride Fin Transistors for RF Applications

#### **Bidusha Poudyal**

(See also M.B.A., Course XV) Predictive Analysis of Installation and Operational Qualification Issues vs. Process Severity Events

Victor Quach Blank Language Models for Sequence Modeling

## Marlyse H. Reeves

(February, 2020) Magellan: A Robust Executive Enabling Long Horizon Multi-Agent Campaigns

## **Oliver Brian Regele**

(See also M.B.A., Course XV) Applied Discrete Event Simulation for Root Cause Analysis and Evaluation of Corrective Process Change Efficacy within Vaccine Manufacturing

Alexander Dominic Renda Comparing Rewinding and Fine-Tuning in Neural Net Pruning

Maryann Z. Rui Auctions of Digital Goods with Externalities

**Gilhyun Ryou** Multi-Fidelity Black-Box Optimization for Time-Optimal Quadrotor Maneuvers

Mayuran Saravanapavanantham (February, 2020) Large-area Lightweight Organic Photovoltaics

### **Zeyuan Shang**

(February, 2020) Democratizing Data Science Through Interactive Curation of ML Pipelines

Jessica Shi Parallel Algorithms for Butterfly Computations

**Thomas Scott Silver** Few-Shot Bayesian Imitation Learning with Logical Program Policies

## Vibhaalakshmi Sivaraman

(September, 2019) High-Efficiency Cryptocurrency Routing in Payment Channel Networks

Jamison M. Sloan Controlling Spins with Surface Magnon Polaritons

#### Shashank Srikant

Vulcan: Classifying Vulnerabilities in Solidity Smart Contracts Using Dependency-Based Deep Program Representations

Austin James Stromme

Wasserstein Barycenters: Statistics and Optimization

### Suleeporn Sujichantararat

(September, 2019) Cybersecurity Vulnerabilities in Operational Technology

## Tuo Sun

(February, 2020) (See also S.M.Arch.S., Course IV) Synthesizing 3D Morphology from a Collection of Urban Design Concepts

## Jialu Tan

(See also M.C.P., Course XI) Using Machine Learning to Identify Populations at High Risk for Eviction as an Indicator of Homelessness

### Shaoying Tan

(See also S.M.Arch.S., Course IV) Space is the Interface: Evaluating Spatial Knowledge Acquisition in Virtual Reality from the Perspective of Locomotion

**Schrasing Tong** Detecting Bias in Image Classification Using Model Explanations

**Arsen Vasilyan** Approximating the Noise Sensitivity of a Monotone Boolean Function

### **Clinton Jia Wang**

Spatial-Intensity Transform GANs for High Fidelity Medical Image-to-Image Translation

## Hanrui Wang

Efficient Algorithms and Hardware for Natural Language Processing

### Mien Wang

Mathematical Analysis of Static and Plastic Biological Neural Circuits

#### Zoë Jewell Wolszon

(See also M.B.A., Course XV) Improving Predictability of Cell Culture Processes During Biologics Manufacturing Scale-Up through Hybrid Modeling Yannan Wu (February, 2020) A Systematic Approach for Architecture-Level Energy Estimation of Accelerator Designs

#### Hanshen Xiao

(September, 2019) Local Differential Privacy in Decentralized Optimization

Qingyun Xie

Gallium Nitride Electronics for Cryogenic and High Frequency Applications

Junshen Xu

Online, Low-Latency Decision Making for Fetal Magnetic Resonance Imaging with Machine Learning

#### Lei Xu

(February, 2020) Synthesizing Tabular Data using Conditional GAN

Zihao Xu Learning Agents in the Market with Adverse Selection

### Mantian Xue

(September, 2019) Chemical and Biomedical Sensors Using Two Dimensional Materials

#### Jianqiao Yang

Simplifying Non-Ane Filtered Reductions with Polyhedral Model

Lei Yang Design and Implementation of a High Performance Blockchain System

Yuzhe Yang On Exploiting Structures for Deep Learning Algorithms with Matrix Estimation

#### Wenjie Yao

(February, 2020) Fundamental Limits to Local Density of States in Absorptive System

Yufeng Ye Nonlinearity Engineering with the Quarton

**Tiancheng Yu** Learning in MDP with Adversarial Reward

#### Mengyang Yuan

(February, 2020) GaN Technology for High Temperature Applications Paul Zhang

(February, 2020) Octahedral Fields for Feature-Aligned Cross-Fields

**Pengxiang Zhang** Quantitative Study on Current-Induced Effects in an Antiferromagnetic Insulator/Pt Bilayer Film

### Wang Zhang

(See also S.M., Course II) Modeling Internal Combustion Engine Three-Piece Oil Control Ring Coupling Reduced Order Oil Transport Based on Neural Network

Yao Zhao

(February, 2020) (See also M.C.P., Course XI) Deep Learning for Sentiment and Event-Driven REIT Price Dynamics

**Jonathan Zong** (February, 2020) Designing Interactive Visualizations by Demonstration

## <u>Master of Science in Chemical</u> <u>Engineering</u> Course X

Department of Chemical Engineering

#### Aaron Davis Baskerville-Bridges

(See also M.B.A., Course XV) Computation and Predictive Modeling to Increase Efficiency and Performance in Cell Line and Bioprocess Development

#### Ketan Kumar

(See also M.B.A., Course XV) Product Management Framework for the Development of Automation Solutions for Biologics Drug Substance Manufacturing

#### **Randy Stein**

(See also M.B.A., Course XV) Process Intensification of *Spodoptera Frugiperda* (*Sf*) Cell Growth via Multi-Parallel Bioreactor System

## Master of Science in Chemical Engineering Practice

Course X-A Department of Chemical Engineering

Dana L. Balek (September, 2019) Attended School of Chemical Engineering Practice in Lieu of Thesis

#### Wui Yarn Chan

(September, 2019) (See also Ph.D., Course X) Attended School of Chemical Engineering Practice in Lieu of Thesis

#### Luke Anthony Dengler

(September, 2019) Attended School of Chemical Engineering Practice in Lieu of Thesis

Xiaorui Dong Attended School of Chemical Engineering Practice in Lieu of Thesis

## Hamid Doost Hosseini

(September, 2019) Attended School of Chemical Engineering Practice in Lieu of Thesis

**Brook A. Eyob** (September, 2019) Attended School of Chemical Engineering Practice in Lieu of Thesis

### Soonhyoung Kwon

(February, 2020) Attended School of Chemical Engineering Practice in Lieu of Thesis

**Hyunhee Lee** (February, 2020) Attended School of Chemical Engineering Practice in Lieu of Thesis

Matthew Robert Letarte (September, 2019) Attended School of Chemical Engineering Practice in Lieu of Thesis

**Joseph Haleem Maalouf** (February, 2020) Attended School of Chemical Engineering Practice in Lieu of Thesis

Maxwell Peter Maritato (September, 2019) Attended School of Chemical Engineering Practice in Lieu of Thesis Lorenzo Milani (February, 2020) Attended School of Chemical Engineering Practice in Lieu of Thesis

#### **Clayton Lambert Powell**

(September, 2019) Attended School of Chemical Engineering Practice in Lieu of Thesis

## Nicholas Walter Schickel

Attended School of Chemical Engineering Practice in Lieu of Thesis

## Yuan Tian

(February, 2020) Attended School of Chemical Engineering Practice in Lieu of Thesis

## Jinming Wang

(February, 2020) Attended School of Chemical Engineering Practice in Lieu of Thesis

### Yen-Ting Wang

(September, 2019) Attended School of Chemical Engineering Practice in Lieu of Thesis

## Master of Science in Aeronautics and Astronautics Course XVI

Department of Aeronautics and Astronautics

Andrew C. Adams Nafion Emitter Tips for Electrospray Thruster Applications

Christopher Powell Bradley (September, 2019) Navigation of Unknown Enviornments Using High-Level Actions

Alejandro D. Cabrales Hernandez Real-Time and Minimum-Fuel Trajectory Generation for Docking with Tumbling Objects

Katherine Shisuka Chun Shape Memory Alloy Actuator for CubeSat Deployable Structures

Christopher Bryce Courtin (September, 2019) An Assessment of Electric STOL Aircraft

**Ryan de Freitas Bart** Reusability Analysis for Lunar Landers Lena Marie Downes Lunar Orbiter Pose Estimation Using Neural Network-based Crater Detection

Faisal Adam Fogle Liquid Lens Beam Steering and Environmental Testing for the Miniature Optical Steered Antenna for Intersatellite Communication

### Kanika Gakhar

The Effect of Free-Stream Turbulence on Dissipation in Turbulent Boundary Layers

## Ximo Gallud Cidoncha

(September, 2019) A Comprehensive Numerical Procedure for Solving the Taylor-Melcher Leaky Dielectric Model with Charge Evaporation

#### Juan Jose Garau Luis

A Comparison of Artificial Intelligence Algorithms for Dynamic Power Allocation in Flexible High Throughput Satellites

**Peter William Grenfell** (February, 2020) GNSS-Based Relative Navigation for LEO Nanosatellite Laser Communications

## Warren Grunwald

(September, 2019) Decentralized On-board Planning and Scheduling for Crosslink-enabled Earthobserving Constellations

#### Dong Ki Kim

(February, 2020) Learning to Teach and Meta-Learning for Sample-Efficient Multiagent Reinforcement Learning

#### Luke Kulik

(September, 2019) Satellite-based Detection of Contrails Using Deep Learning

## Madeline Marie Lambert

A Root Cause Analysis of the REXIS Detector Efficiency Loss During Phase E Operations

**Beldon Chi Lin** Simultaneous Vehicle and Mission Design using Convex Optimization

Seamus Joseph Holt Lombardo Evaluating the Effect of Spacesuit Glove Fit on Functional Task Performance

#### Jonathan V. MacArthur

Material and Fabrication Developments in the Ion-Electrospray Propulsion System

### Patrick Calvin McKeen

(September, 2019) Modeling and Tradespace Exploration of a Space Suit Hip Bearing Assembly using Multi-Degree-of-Freedom Range of Motion Analysis

#### Nicolas Pierre Meijers

(February, 2020) Data-Driven Predictive Analytics of Runway Occupancy Time for Improved Capacity at Airports

#### Daniel Martin Miller

Low-thrust Spacecraft Guidance and Control using Proximal Policy Optimization

#### Samuel John Miller

Object Tracking in Multistatic Millimeter Wave Radar Networks

## Julia Milton

(February, 2020) (See also S.M., Technology and Policy Program) Technical and Policy Considerations of Sensor-Based Decision Aids

#### Christian Donovan Montgomery

Decentralized Resource Allocation for Synchronized Tasks Through Adaptive Large Neighborhood Search (ALNS)

## Rachel E. Morgan

(February, 2020) Optical Modeling and Validation for the Deformable Mirror Demonstration Mission

#### Dylan Toshinari Muramoto

(See also S.M., Technology and Policy Program) Tailorability-Focused Recommendations for United States Air Force Software Acquisition Policy

## Golda Minh Ý Nguyen

Evaluating the Use of Wearable Inertial Measurement Units for Telemedicine Applications

## Uyiosa Mark Oriakhi

(February, 2020) (See also S.M., Technology and Policy Program) A Stochastic Life Cycle and Greenhouse Gas Abatement Cost Assessment of Renewable Drop-in Fuels

## Aleix París i Bordas

Control and Estimation Strategies for Autonomous MAV Landing on a Moving Platform in Turbulent Wind Conditions

### **Cadence Brea Payne**

Auxiliary Sensor Package for Characterizing Aurora with the AERO and VISTA CubeSats

### Tianyi Peng

(February, 2020) Multiparty Quantum State Discrimination

#### **Rachel E. Price**

Assessment of the Expert Locomotive Engineer's Mental Model through Expert-Novice Interactions

#### Vaishnavi Ramaswamy

Development and Application of Transition Detection Using Infrared Thermography for Characterization of Fan Blade Waviness Effects

#### Michael Sebastian Schmid

Model-Based Certification of Automated Vehicles

**Chockalingam Senthilnathan** (September, 2019) Shear Shock Evolution in Soft Solids

### Noah Wittel Siegel

Silicon Wafer Integration of Ion Electrospray Thrusters

### Alexandra Nicole Straub

Expanded Tradespace Analysis and Operational Considerations for Reconfigurable Satellite Constellations

## Kieran Leif Strobel

(February, 2020) Experimental Characterization of Surface Integrated Electroaerodynamic Thrusters

### Jeremy P. Stroming

Design and Evaluation of Elements of a Life Support System for Mechanical Counterpressure Spacesuits

### Soumya Sudhakar

Balancing Actuation Energy and Computing Energy in Low-Power Motion Planning

**Geoffrey Karl - Georg Svensson** Analysis of a 1D Scramjet Model Jessica Eve Todd (September, 2019) Commanding Small Satellites for Simulated Spacecraft Inspections Using Augmented Reality

**Carmen-Ioana Ursachi** Output-Based Adaptive Meshing for Higher-Order FEM RANS Solutions on a Multi-Element Airfoil

## Amy Ruth Vanderhout

Synthesis and Mechanical Characterization of Aligned Carbon Nanotube Metal- and Carbon-Matrix Nanocomposites

### Kevin K. Wang

Airline Revenue Management with Dynamic Offers: Bundling Flights and Ancillary Services

### Lingmiao Wang

(See also M.B.A., Course XV) Optimizing Thermal Spray Quality Verification in FAA Repair Station Specializing in Rotating Components

## **Zhishen Wang**

(September, 2019) Quantitative Policy Analysis for Aviation Biofuel Production Technologies

### Nicholas David Wilde

Optimization and Prototyping of a Surface-Integrated Electroaerodynamic Thruster

### Yeyuan Xin

Coronagraphic Data Post-processing Methods using Projections on Instrument Eigenmodes

### Zehao Yu

Towards Location-Awareness in Next Generation Wireless Networks: A New Approach Based on Channel State Information

### Yiyun Zhang

Pulsed Nanosecond Dielectric Barrier Discharge in Nitrogen at Atmospheric Pressure

## Master of Engineering in Biomedical Engineering Course XX-P

Department of Biological Engineering

#### Tarun Vinod Kamath

(See also S.B., Course IX) Tau Aggregation is Heterogeneous Across Cases of Sporadic Alzheimer's Disease and is Influenced by Autophagy Pathways *in vitro* 

### Samantha M. Leff

(September, 2019) Development of a Microfluidic Droplet System for Immune Cell Multiplexing Experimentation

# Master of Science in Biological Engineering

Course XX Department of Biological Engineering

#### Nicole Ann Oliver

(See also M.B.A., Course XV) Developing a Robust Harvest for High Cell Density CHO Cell Culture

## Master of Science in Nuclear Science and Engineering Course XXII

Department of Nuclear Science and Engineering

# Saleem AbdulFattah Ahmed Al Dajani

(February, 2020) Non-Destructively Detecting Spinodal Decomposition at a Distance: Towards Developing Gigahertz Ultrasonics for In-Vessel Inspection

### Dakota Jay Allen

Impact Assessment for the MIT Research Reactor Low Enrichment Uranium Fuel Fabrication Tolerances

## Brian Scott Casel

(February, 2020) Improved Turbulent Lift Momentum Closure for Multiphase Computational Fluid Dynamics

### Zhiyuan Cheng

Safety Analysis of a Compact Integral Small Light Water Reactor Nicholas Anthony Costa Physical Specifications and Measurements of the MIT Graphite Exponential Pile

Minh A. Dinh Hydrogen in Transition Metal Doped Transparent Conductive Oxide SnO2

**Zhuoran Han** (February, 2020) Performance Analysis of Functional Expansion Tallies on 2D PWR Pin Cell

Anupam Jena Wettability of Candidate Accident Tolerant Fuel (ATF) Cladding Materials in LWR conditions

Alexander Jerome Sandberg (September, 2019) Shielding Design for the Time-resolving Magnetic Recoil Spectometer (MRSt) on the National Ignition Facility (NIF)

Zachary Skirpan Multiphase CFD Benchmark of Experimental Critical Heat Flux Data at PWR Operating Conditions

Enrique Velez Lopez (February, 2020) (See also M.Eng., Course I-P) Is Embedding the Reactor Building Below Grade a Cost-Effective Proposition?

## Master of Applied Science in Supply Chain Management

Program in Supply Chain Management

Bilal Ahmed

Sherif Alhalafawy

Laura Silvana Allegue Lara

Tala Muneer Alnajdawi

Wassim Aouad

Venkateswararao Bandaru

Ashley Ann Barrington

Sireethorn Benjatanont

Henrique Berbel Pedreira

Angelica Odilia Bojorquez Aispuro

Santiago Botero López Jamica Baltazar Brillante Adam R. Buttgenbach Analiz Cabrera Hernández Yuchen Yvonne Cao Justin Patrick Casey Muhammad Salman Chaudhry Haiyin Chen **Colleen Grace Copley Catherine Eileen Dame** Huong Thi Dang Vijay Krishnan Dasan Potty Vu Bich Nga Doan Emilio Dolci Fedor Egorov Brett Anthony Elgersma Kristian From Sara Viviana Gallo Orjuela Nikhil Ganapathi Christian Alfonso Gatmaitan Gina Markette Gerhart Abhinav Goyal **Elizabeth Shree Raman Grubbs** An Qi Hao Yuto Hashimoto Abdelrahman Ayman Osman Hefny **Christoph Friedrich Herrmann** Xuefang Hu Libin Huang Yan Huang Sae Pil Jung Sohyun Jung

Andrew Kerr

Gabriela Isabel Lamas Oporto Yoon-Joo Lee Israel López Jiménez Lu Lu Jesús Gabriel Madrid Katharina Constanze Mangan Sundeep Mathur Tarso Dantas de Melo Andrew Lee Min Katherine Gail Nowadly Anthony Vincent Orr Anais Ortega Camacho Ni Pan **Carlos Yohan Rafavy** Henrique Ribeiro Carretti Mahmood Ahmed Abdelhamid Serry Liam Charles Sharkey Hari Kishan Sharma Sadia Rahman Shathi Luiz Paulo Silva Barreto Alessandro Silvestro David L. Sokoloff Sindhu Srinath Jamie Alison Sweeney Amr Mohammad Taiyeb Dylan Francisco Tantuico, Jr. Jamal Taylor Trevor Nathan Thompson James Alan Vasa Ezra Jacob Weisel Lisha Morlen Yangali Del Pozo Zhehao Yu Gaohui Zhang

## Master of Engineering in Supply Chain Management

Program in Supply Chain Management

Saikat Banerjee E-commerce Based Closed-Loop Supply Chain for Plastic Recycling

Ngan Ngoc Chau Intermittent Demand Forecasting for

Inventory Control: The Impact of Temporal and Cross-Sectional Aggregation

Matthew James William Dale Linking Payment Terms and Lead Times

Ye Ma Human-Machine Teaming for Intelligent Demand Planning

## Michael Sean Smith

Closing the Gap Between Information and Physical Flows in a Digital Transformation

Wei Jie William Teo

A Natural Language Processing Approach to Improve Demand Forecasting in Long Supply Chains

## Master of Science in Computation for Design and Optimization

*Program in Computation for Design and Optimization* 

## Angus Foo

(February, 2020) Contributions to Automatic Meshing in the AMORE Scheme

Nikhilesh Ghanta Meta-Modeling & Optimization of Computational Fluid Dynamics (CFD) Analysis in Thermal Comfort for

Energy-Efficient HVAC Systems

Wael Hajj Ali

(September, 2019) Dynamically Orthogonal Equations for Stochastic Underwater Sound Propagation Evan Keefe Massaro

Modeling CMS Tier-0 Compute and Network Resource Needs

**Gin Kaijing Ong** Short-to-Medium Term Dengue Forecast in Singapore

**Tony Tohme** The Bayesian Validation Metric: A Framework for Probabilistic Model Calibration and Validation

Pengbo Zhang (September, 2019) Learning Model for Forecast Information Sharing

Master of Science in Engineering and Management Program in System Design and

Management

Patricia Arnal Luna Policies Affecting NetZero Transportation Costs, Consumer Behavior, and Change in GHG

Behavior, and Change in GHG Emissions.

Siddharth Bajpai (February, 2020) Planning Large-Scale Agile Development Using a Dependency Structure Mapping Model

Nikita Bansal Enabling the Enablers: Transforming the Lives of Middle-Age Indian Mothers

Ahmed Bilal (September, 2019) Using Learning Analytics to Evaluate Design Changes in MOOCs: A Case Study on Assessing Course Pacing

**Badrul Bilal** Architecting the Future of a Global Automobile Supplier: A Socio-Technical Perspective

**Sofia Blumencweig** From Pastime to Purpose: Design for the Elevation of Creative Hobbies

**Dextina A. Booker** (See also S.M., Course II) The Future of Fashion & Human Gesture Control: Exploration of a Wearable Communication Device for Sign Language Speakers Helena Briones Panadero

Analysis of the Car Seatbelt Design. A Study of the Invention and Proposal to Minimize the Risk of Injuries During Pregnancy

Michael Christopher Brown

Technology Roadmapping and Design Optimization of an Innovative Mineral-Organic Adhesive for Bone Repair

Luciana Bueno Gomez Desigining Creative Learning Experiences for Teachers

## Chinh Thi Diem Bui

A Study of the Challenges faced by FDA-Regulated Early-Stage Medical Device Startups and How to Approach Them.

Shelley Claire Chan Comparing Urban Data Governance Policies

Hongling Chen

(See also S.M., Course II) A Vascular Imaging System for Longitudinal Registration and Mapping of Superficial Vessels with Quantitative Analysis

Zhiyu Chen

(February, 2020) Energy Transition in Singapore: A System Dynamics Analysis on Policy Choices for a Sustainable Future

Kelly Ann Chiverton

(February, 2020) Framework for Selecting a System Design Approach

Lisa Crofoot Management of Cross-Team Interfaces in Large-Scale Agile Development

**Qiang Cui** (February, 2020) Use of Machine Learning in Radio Frequency Integrated Circuits (RFIC) Development

Andrew James Cunningham

Case Study for Populating a Two Sided Platform

Thomas Andrew Deeter

(See also Naval E., Course II) Creating a Shipboard Power Simulation Tool Using Electrical Load Behavior Modeling

## Sofiane Djeffal

Adaptive Defense Against Adversrial Artificial Intelligence at the Edge of the Cloud Using Coevolutionary Algorithms

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Data Literacy in the Digital Age: Experience Design for a Workplace Learning Solution

#### Nicholas Henry Dowmon

(February, 2020) A Generic Framework for Detecting Interpretable Real-Time Anomalies in Network Traffic Data

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Managing Environmental Risks with Flexibility: Case of Phosphate Fertilizer Industry in Morocco

Vedavinayagam Ganesan

(September, 2019) Digital Transformation and Its Influence on Platform Business

#### Avinash Gulabrao Ghorpade

Investigating Roadblocks to Artificial Intelligence Adoption in Enterprises through a Systems Perspective

### Nava Haghighi

(See also S.M., Course VI) Self-Interfaces: Utilizing Real-Time Biofeedback in the Wild to Elicit Subconscious Behavior Change

**Emily Jane Hsu** (See also S.M., Course II)

Design of a Measurement Device for Bread Dough Proofing

Samip Jain An Inclusive Design Framework for Autonomous Vehicles to Create Valuable Experience for Elderly

Umesh Jain

(February, 2020) Digital Health Innovation & Commercialization Framework **Robin Jha** (February, 2020) Analyzing the Impact of Digital Transformation on Business

Damon Jones Real Time Demand Forecasting for Dynamically Optimizing Satellite Communications System

## Vivek Venkata Kalluru

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Takuya Kashimura (February, 2020) Mathematical Analysis of Uncertainty in Machine Learning and Deep Learning

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Yashashree Kokje Privacy Preserving Genome-wide Association Studies

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### Donald Kai-Kean Lew, Jr.

Applying an Uncertainty-Based Acquisition Strategy Framework to Select An Appropriate Approach for New Product or System in the Military

**Blanca L. Foncillas** The Future of Retail

Dai Lin Access With(out) Judgment

Michael Kaiping Liu (See also Naval E., Course II) Beamforming Performance Enhancement by Adaptive Hyperbola Array Shape Estimation

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Lok Yee Melody Mui

(February, 2020) Human-Centered Fashion: From Scratching to Selling

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Technology Elasticity: Demand Impact on the Commercial Success of Regional Aircraft.

**Koji Nakashima** The Project of Sharing Economy in Lodging in Tokyo and NY

**Patrick Sean O'Reilly** (February, 2020) Architecting the Enterprise to Manage Innovation

Larisse-Ann Yee Ortiz-Luis

(See also M.B.A., Course XV) Designing Effective Strategies to Accelerate Consumer Adoption of Alternative Proteins

## **Evan Hartley Platt**

An Exploration of Spinal Care Injury Treatment: Opportunities to Improve Functional Recovery and Independence for Patients with Incomplete Spinal Cord Injuries

### Yiyuan Qin

Design for Community Resilience in the Age of Disasters: A Case Study in Puerto Rico

Gokul Prasath Rajamanickam

A Multispectral Imaging Method and Device to Detect and Quantify the Presence of Fluid in the Middle Ear to Facilitate the Diagnosis and Triage of Ear Infections

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Rhetorical Fractures: Designing for Social Movement Growth Using Ancient and Contemporary Tools

Ajay Siva Rayasam

Predicting At-Risk Students from Disparate Sources of Data

#### Priyanka Ray Barua

(February, 2020) Humanistic Co-Design of a Solution for the Rehabilitation of Children suffering from Cortical Visual Impairment.

### Jairo Ernesto Rodriguez Tovar

Sustainable and Inclusive Last-Mile Transportation for Developing Countries

#### Keran Rong

System Design and Optimization of an Aerial Refueling System for Transcontinental Flights

## Michael Louis Sapienza

(September, 2019) Analysis of Energy Delivery Sector Malware Attack Response Mechanisms

#### Pankhuri Sen

(February, 2020) (See also S.M., Technology and Policy Program) A Smart Diaper Wetness Detection Sensor: Concept, Design and Ethical Considerations

#### Sarabjeet Singh

E-commerce Platforms and Business of Selling Groceries Online

### Hannah M. Slominski

Using STPA and CAST to Design for Serviceability and Diagnostics

#### Yuki Soeda

Analyzing the Future Architecture of High-Speed Railway Maintenance in Japan

#### Ryuichi Takagi

An Approach to Developing a Resilient High-Speed Rail Enterprise Architecture Through Digital and Human-Centralized Transformation

#### Yasutsugu Tamura

Investigating the Impact of Technology Progress on the Future Architecture of Japanese Space Enterprise

## Brendan Weijian Tan

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#### Javier Treviño Ruiz

A Survey of Human-Centered Design Methodologies for a New Hybrid Approach in Product and Experience Innovation **Daniel Xavier Valderrama** Rider Multihoming in the Rideshare Market

Ramaa Venkatachari Maternal Mental Health and Child Outcomes: A Human-Centered Design Perspective on Preventive Mental Health Care

## Anping Wang

Analyzing on How Short-Video Social Media Influence Decision-Making Process

## Juliet Wanjiru Wanyiri

(See also S.M., Course II) Structural and Aesthetic Design Applications of Flexible, Thin-film Solar Cells to Power Off-Grid Tensile Structures

Daniel Arthur Wollin (February, 2020) Motion Analysis of Flexible Ureteroscopic Techniques by Urologic Surgeons

## Ming-Hui Wu

Case Study for Next-Generation Augmented Reality Device

### Xiaoyu Yan

Newsonomics: Business Model Innovations in News Media Organizations

#### Kevin Yu

Innovation Processes & Culture on Financial Impact

Tamara Miller Zaichkowsky (February, 2020) Digital Transformation of Global Banks

Jiani Zeng (February, 2020) Expend Material Presence to Material Experience with Volumetric Thinking – Voxel Based Multi-Material Printing in Designing Objects

## Bin Zhou

Volatility Trading System Design with Scaling Risk Management

## <u>Master of Science in Health</u> <u>Sciences and Technology</u>

*Program in Health Sciences and Technology* 

## Davi Eric da Silva

(February, 2020) Human Strategies for Manipulation of Physical Objects with Complex Dynamics

## Master of Science in Technology and Policy

Institute for Data, Systems, & Society

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(September, 2019) The Anonymity-accountability Trade-off in Communication Networks

#### Lawrence Mark Baker (September, 2019)

Blood Glucose Management in the ICU

**Charles William Chimento III** (See also S.M., Course VI) Innovation in the US Air Force

#### Anna Christine Evans

A Framework for Assessing the Value of Flexibility in Electricity Network Investments

## Tomas Wesley Green

Distributed Household Effects of Climate Policy in the United States

#### Andrés Inzunza Besio

Distributional Effects of Net Metering Policies and Residential Solar Plus Behind-the-meter Storage Adoption

### Hazal Mine Kansu

(September, 2019) Artificial Intelligence Impact on Occupations and Workforce

### Xavier Paul Lister Lavenir

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### Pedro Manuel Maddens Toscano

Impacts of Airports on the Quality of Life of Surrounding Communities Julia Milton (February, 2020) (See also S.M., Course XVI) Technical and Policy Considerations of Sensor-Based Decision Aids

#### Dylan Toshinari Muramoto

(See also S.M., Course XVI) Tailorability-Focused Recommendations for United States Air Force Software Acquisition Policy

### Benny Siu Hon Ng

(See also S.M., Course VI) A Machine Learning Approach to Evaluating Renewable Energy Technology: An Alternative LACE Study on SolarPhoto-Voltaic (PV).

## Uyiosa Mark Oriakhi

(February, 2020) (See also S.M., Course XVI) A Stochastic Life Cycle and Greenhouse Gas Abatement Cost Assessment of Renewable Drop-in Fuels

#### Bora Ozaltun

(See also S.M., Course VI) Learning from Supply Shocks in the Energy Market: Evidence from Local and Global Effects of the Shale Revolution

#### Sohum Parag Pawar

Resilient Decarbonization for the United States: Lessons for Electric Systems from a Decade of Extreme Weather

#### Iván Rudnick García

(September, 2019) Incorporating Renewables into India's Electric Power System by 2037: Evaluate Emissions and Total Costs of Different Pathways That Meet the Government's Long-term Goals

### Pankhuri Sen

(February, 2020) (See also S.M., Engineering and Management) A Smart Diaper Wetness Detection Sensor: Concept, Design and Ethical Considerations

## Master of Science in Transportation

Matthieu Etienne Antoine Crepy Course I Leveraging Public Transit for Robust Last-Mile Distribution

#### Samarth Gupta

Course I (February, 2020) Adversarial Robustness of Deep Learning Models: An Error-Correcting Codes based Approach

#### Anne Woodbridge Hudson

Course XI (See also M.C.P., Course XI) Whereto Next? Analyzing Livability and Accessibility in the Later Stages of Life

#### Jonathan Hoagland Leape

Course XI (See also M.C.P., Course XI) Winning the Housing Lottery in Rio de Janeiro: Curse or Cure?

## Jintai Li

Course I (September, 2019) (See also M.C.P., Course XI) Future Transit Service for a Broader User Base: Demand Analysis of Hypothetical Autonomous Vehicle Mobility Services Using a Stated Preference Approach

#### Baichuan Mo

Course XI (See also S.M., Course VI) Network Performance Model for Urban Rail Systems

### Alexander Papen

Course I Competitive Impacts of Continuous Pricing Mechanisms in Airline Revenue Management

### Mark Perelmuter

Course XI Quantifying Passenger Impact of Disruptions on Metro Lines

## Akash Bharat Raigangar

Course I (February, 2020) Evolution of Low-Cost Airlines in Different Global Regions

#### Maud Sophie Sindzingre

Course XI (September, 2019) Detecting and Quantifying Bus Operation Impedance: the Balance between Reliability and Speed

## Abigail Joanne Smith

Course I Framework for Establishing Asset Visibility and Traceability of Medical Devices

#### **Qing Yi Wang** Course I

Extraboard Scheduling in the Transit Industry

## **Naval Engineer**

Course II Department of Mechanical Engineering

### Jason Barnell Barker

(See also S.M., Course II) Automated Decision Making for Operations within a Traffic Separation Scheme Using MOOS-IvP

#### David Paul Baxter

(See also S.M., Course II) Toward Robust Active Semantic SLAM via Max-Mixtures

### **Thomas Andrew Deeter**

(See also S.M., Engineering and Management) Creating a Shipboard Power Simulation Tool Using Electrical Load Behavior Modeling

#### Charles Hayden Hasenbank

(See also S.M., Course II) The Design, Feasibility and Cost Analysis of Sea Barrier Systems in Norfolk, Virginia and the Comparative Cost of Shoreline Barriers

#### Austin Robert Jolley

(See also S.M., Course II) Design, Construction, and Analysis of a Modular Ship Model and Open-Source Autonomous Surface Vehicle

#### **Michael Kaiping Liu**

(See also S.M., Engineering and Management) Beamforming Performance Enhancement by Adaptive Hyperbola Array Shape Estimation

#### Tikhon James Ruggles

(See also S.M., Course II) Electronics First: Development of a Basic Electronics Course of Study for Naval Engineers

## Brian Asanuma Stanfield

(See also S.M., Course II) Incorporating Contact Management and Marine Dynamics in Decentralized Auction Bidding for Autonomous Surface Vehicles

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Master of Business	James Henry Flatley V	Angela Dawn Lawson
Administration Course XV-A (Sloan Fellows)	Yi Chiao Fu	Deploying the Right Technology: A Framework for Digital Strategy and
Sloan School of Management	Tomoki Fujisaki	Selection at the United States Postal Service to Shape the Future of Work
Mohamad Ali Iqbal bin Abdul Khalid	Nikolay Georgiev Georgiev	Michael William Maizels
Melissa Kay Graham Adamski	Abhishek Gupta	Alfredo Martínez Guzmán
Olamide Christopher Adeosun	Ryusuke Haga	Atsushi Matsui
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	Ji Hong Kim	Sorakrit Phruthanontachai
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	Erika Lea Gianni	Gene Mak
Sloan School of Management	Andrey Gladkov	Rao Venkatramana Mantri
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Stephen Gregory Barr

Nate William Bechtel

Daniel Becker Feldman

Navneet Behl

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<u>Master of Business</u> <u>Administration</u> Course XV Sloan School of Management

Robert James Addy (See also S.M., Course II) Cost of Complexity: Mitigating Transition Complexity in Mixed-Model Assembly Lines

Rahul Agarwal

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Ali Said Alrayes (See also S.M., Course VI) Transmission System Overvoltage Mitigation Through the Use of Distributed Generation (DG) Advanced Inverters

Ethan Lalakea Alter

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Ruhani Arya

Takehiro Asakura

Janice Bae

Elizabeth Noyes Bagley

Leo Anthony Bonfanti Balsom

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Aaron Davis Baskerville-Bridges (See also S.M., Course X) Computation and Predictive Modeling to Increase Efficiency and Performance in Cell Line and Bioprocess Development

**Brooke Emily Baumgartner** 

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Ajay Bawa

Audrey Bazerghi (See also S.M., Course I) Inventory Modeling for Active Pharmaceutical Ingredient Supply Chains

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**Rachel Alice Blum** 

**Benjamin David Boutboul** 

Yann Michel Yves Marie Boyeldieu

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Allison Rose Brouckman

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**Brendon W. Chiu** (See also S.M., Course II) Additive Manufacturing Applications and Implementation in Aerospace

**Tzer-yen Chow** 

Jeffrey Bowen Chu (See also S.M., Course II) Investigating the Feasibility and Impact of Integrating Wire-Arc Additive Manufacturing in Aerospace Tooling Applications

#### Jonathan David Chu

**Brittany Elizabeth Churchill** 

Santiago Clara

Cameron Cler

**Donald Mateo Coates** (See also S.M., Course II) Integrating Agile within Complex Hardware Development via Additive Manufacturing

### Guillermo Colell Brandan

**Ellen Coleman** (See also S.M., Course II) Establishment of a Novel *Pichia Pastoris* Host Production Platform

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**Bryan Cortes** 

Hugues Coruzzi

Antonio da Cunha Gonçalves Prado

Vivian Dai

Lea A. Daigle (See also S.M., Course II) Organizational Architecture Design and Assessment of Statistical Feasibility for FSDA Implementation in an Airplane Subassembly

Or Dan

(See also S.M., Operations Research) Improving Prior Knowledge Assessment in Process Characterization

Kyle Ricardo Danner (See also S.M., Course II) Utilizing Automated Inspection to Identify Surface Quality Defects within the Automotive Body Assembly Process

**Durgesh Das** (See also S.M., Course VI) Assessing Sales Floor Capacity and Replenishment Strategy

Shouvik Das (See also S.M., Course I) Multi-Echelon Supply Chain Design for Amazon Private Brands

Kristell Mariette Anne Dauphin

**Monique Claire Davey** 

Cara Maureen Davis

Matthew Souma Deane

Martin de la Herran Oyarzun

Pablo Del Pozo Arance

Harsh Ameet Desai

Romain de Saint Périer

Fatima Zahraye Diallo (See also S.M., Course II) Using Discrete-Event Simulation to Increase System Capacity: A Case Study of an Assembly Plant

Borja Domínguez Mouriz

**Genevieve Claire Dukes** 

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Vaishali Gadhok

Nicolai Valentino Gamrasni

Jaime García González

Mariana Garcia-Valdecasas Dorrego

**Brian Gabriel Gaudio** (See also S.M., Course II) Assessing the Impact of Historical Operational Data from Complex Assets on Predictive Maintenance Models

#### Ernesto Gaxha

**Efewongbe Keyirokome Gboneme** (February, 2020)

#### Jeffrey Georgatos, Jeff Georgatos

Noa Ghersin (See also S.M., Course II) Improving Asset Utilization and Manufacturing Production Capacity Using Analytics

Dipayan Piku Ghosh

Garoon Jordan Gibbs-Racho

Alejandro León Gimeno Sanz

Matteo Gobbi

Nigel Min Feng Goh (See also S.M., Course II) Applications of Risk Pooling for the Optimization of Spare Parts with Stochastic Demand Within Large Scale Networks

Amir Goldberg-Kidon

Molly Gibbons Golinvaux

Carolina Alejandra Goncebat

Anchal Goyal

Mauro José Granese Rosselli

### Glen Michael Gregory

**Gerardo Guadiana** A Netflix Experience: Reimagining the Direct-to-Consumer Platform

**Emily Yi-Chieh Guo** 

Nadim Amine Hachem

Rebecca S. Hammer

Guannan Han

Monica Francesca Harnoto (See also S.M., Course I) Value of Distribution-Level Reactive Power for Combined Heat and Power Systems

Seth Tohn Harper

#### Meaghan Deborah Hartman

**Denton Xiang He** (See also S.M., Course II) Distribution and Replenishment Optimization between Locations of High and Low Real Estate Cost

Clare Deborah Herceg

Igor Brenner Hernandez Neves

Chanelle Nicole Herring

**Itay Himelfarb** 

Christina Cheing Ho

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Camille Jackman

Shuang Ji

**Zeyuan Jiang** 

Jared Ray Johnson

Kyle Thomas Johnson

Samuel Garvey Johnson

Felipe Jorquera

Sahil Vivek Joshi

Bhuvit Jotikasthira

#### Nicholas Makari Judson

Nalaka Kanishka Bandara Kahawatte (See also S.M., Course I) Digital Business Model Development and Validation for Real-Time Monitoring Solution for Electrical Power Transformers

#### Harry Kleinberg Kainen

James Benjamin Kalin

Ravitej Reddy Kanapuram (September, 2019) (See also S.M., Course II) Using Data Science and Model Based Systems Engineering to Design and Operate Production Systems

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Nishith Kaushik

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**Ketan Kumar** (See also S.M., Course X) Product Management Framework for the Development of Automation Solutions for Biologics Drug Substance Manufacturing

**Tansaya Kunaratskul** (February, 2020)

Young Soo Kwon

Víctor Lafuente Aceituno

Hersh Lakdawala

Matteo La Naia

Jordan Riley Landis (See also S.M., Course II) Benchmarking Environmental Efficiency of Garment Factories to Understand the Value of Real-Time Environmental Data

Guillermo Larrucea Vinós

Victor Laurindo Horta Ferreira

Jaclyn Grace Leccese

Eric Tzy Jung Lee

**Robert Lee** 

**Thomas Bourne Lefevre** 

Ada Xiaoyuan Li

Dickson Li

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Maria Luisa Jimenez Lim

Ying-Jeng Lin

Robert Lindeen de la Fuente

Steve Tuekam Lionel

Mengjie Liu

Tuo Liu

Zihuai Liu (See also S.M., Course I) Artificial Intelligence Infrastructure into Material Attributes Insights Antonio Llorens

Sahejvir Locham

Alan Everett Long (See also Ph.D., Course X)

Jay Michael Lopez-Braus

Hugo A. López Velarde Martínez

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Laurel J. Marcus

Francisco S. Marino

Randall Chase Markham (See also S.M., Course I) Reducing Inventory through Supply Chain Coordination in an Industrial Supply Chain

Randall Markush-Hallman

**Clara Sophie Marquardt** 

Victoria Barbara Martin

Maria Martinez Calazans Rodrigues

Alfonso Manuel Martinez Sanchez

David Anthony Mazza

**Colin Alex McIntyre** (See also S.M., Operations Research) Optimizing Inbound Freight Mode Decisions

**Connor Hamilton McLane** 

Matthew McLean

**Emily Lauren Pogar Meade** 

Dhwani Mehta

**Paul Meierling** 

Dana Mekler

Alessandro Melini

**Thomas Collins Meyer** 

**Brett Daniel Mills** 

Enric Guillermo Miralles Carretero

Lara Mitra

Kshitij Mittal

Alyssa Moledina

Filipe da Conceição Pereira Monteiro

Dante Edward Montgomery (See also S.M., Course II) Project-Based Manufacturing: An Approach for Quote Development

Carl Moos

**Michel Mosse** 

Akhan Mukhanov

Ananya Mukkavilli

Lorcan A. Murphy (See also S.M., Course I) Increasing E-commerce Distribution Center Capacity Through Slotting Strategy

Marjani Nicole Nairne

Erica Margaret Nangeroni

Mercy Kavivi Ndambuki

Anthony Mark Ndikum

Danielle Nedivi

Margaret Ellen Neff (See also S.M., Course I) Evaluating Modeling Techniques for Quantifying Production Risk in Contact Lens Manufacturing

Jeremy Binder Ney

Jamie Niu

Hans Antoon Nowak II (See also S.M., Course II) Strategic Capacity Planning using Data Science, Optimization, and Machine Learning

Camila Nunes Metello

#### Mohamad Jad Ojjeh

#### Rea Candra Oktaviara

Nicole Ann Oliver (See also S.M., Course XX) Developing a Robust Harvest for High Cell Density CHO Cell Culture

#### **Chloe Artemis Orphanides**

Larisse-Ann Yee Ortiz-Luis (See also S.M., Engineering and Management) Designing Effective Strategies to Accelerate Consumer Adoption of Alternative Proteins

### **Babette Josephine Christine Paping**

Komal Ravindra Patel

**Kristofer Bryce Peck** 

Walter Charles Peppelman III

Andrew B. Perlman

Hannah Michelle Phillips (See also S.M., Course I) A Data-Driven Approach to Continuous Improvement in Reverse Logistics

Jarrod Todd Pierce

Victoria Anne Pisini

**Bidusha Poudyal** (See also S.M., Course VI) Predictive Analysis of Installation and Operational Qualification Issues vs. Process Severity Events

**Evan William Alroy Powell** 

**Kushal Purie** 

Talía Quijano Mulanovich

Divya Raghavan

Matan Ravid

Joshua Reed-Diawuoh

Oliver Brian Regele (See also S.M., Course VI) Applied Discrete Event Simulation for Root Cause Analysis and Evaluation of Corrective Process Change Efficacy within Vaccine Manufacturing

Jason Matthew Rehhaut

Kelly Joan Ren

Javier Dante Renna

**Kevin Grady Reynolds** 

Arturo Alfonso Ricke Zegers

Ashley Victoria Rinere

Madeline Kirby Ripley

Francisca Andrea Riquelme Fenner

**Eric Thomas Roberts** 

**Taylor Kirstyn Robinson** (See also S.M., Course II) Leveraging Flexible Manufacturing in Streamlining New Product Launch Processes

Gabriela Romero Garibay

**Daniel Morse Rosengard** 

Ehud Rosenhand

Michael Columbus Ross (See also S.M., Course II) Reducing Variations in a Highly Constrained Environment in Order to Increase Production Capacity

**Robert Rovai** 

João Pedro Wald Saad

Matias Sahli

Kittichai Salingkaleekul

Erica Sharyn Salmirs

Alessia Olimpia Samaranch Bigelli

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Isaac Melquisedec Santos

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Steffen Werner Schmidt

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Nathan Daniel Serota

Ishan Shah Jaina Shah

Devon Bresler Shapiro

Sumit Kumar Sharma

Takuya Shimojo

Yasuhiro Shimozono

Katherine Marie Shirrell

Vladislav Shraybman

Zeeshan Riaz Siddiqi

Augusto Siguero Güemes

Sharad Singhani

Tassuda Sirilerkpipat

Jegadeesh Sithamparathas

Ilan D. Slovin

Julianne Patricia Smith

Divya Sohal

**Kelsey Price Sommers** 

Katherine Jean Soule

Randy Stein (See also S.M., Course X) Process Intensification of *Spodoptera Frugiperda* (*Sf*) Cell Growth via Multi-Parallel Bioreactor System

**Brett Aaron Sternfield** 

**Emma Rose Stevens-Smith** 

Amanda Jo Stibel

**Brendan Ferris Stiffle** 

Aaron D. Stinnett

Anjelaka Renee Stolte

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Van-Anh Su

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**Christie Ting** 

Christopher David Tinsley

Paul Toribio

Luis Eduardo Torres Robles

**Georgia Boyd Travers** 

**Timothy Tsang** 

Kazuki Tsuchiya

Adriane Ann Turner (See also S.M., Course II) Evaluation of Automated Storage and Retrieval in a Distribution Center

Osaze C. Udeagbala

Anant Padmanabha Udpa

Lea Freeman Vavoules

Alfredo Enrique Vetencourt

Joaquin Visquert Pitarch

Daniela Maria Viteri

Stephen Kaapuni Wagner

Lingmiao Wang (See also S.M., Course XVI) Optimizing Thermal Spray Quality Verification in FAA Repair Station Specializing in Rotating Components

Katie Elizabeth Wartman

Samuel Ross Waterbury

Merit Rachel Webster

Elizabeth Weingartner (February, 2020)

Annie Ryan Ungrady Weißbach

India Claire Wells

**Dillon Ford Wiesner** 

#### **Thomas Lee Wilder III**

#### **Christopher Stephen Willis**

William Geoffrey Winegar (See also S.M., Course I) Standardization of New Product Introductions to Achieve Zero Defect Lines

## Korin Winstok

**Zoë Jewell Wolszon** (See also S.M., Course VI) Improving Predictability of Cell Culture Processes During Biologics Manufacturing Scale-Up through Hybrid Modeling

**David Travis Kent Woodruff** (See also S.M., Course II) Stepping Toward a Smarter Factory at Canam

Yiche Wu

Dawn Xiang

Sile Xiong

Roger Wang Xu

Yan Hau Xu Wu

**Sagar Pandey Yadama** (See also S.M., Course II) Data Driven Risk Assessment for Turbine Engine Programs

Natsuko Yamazaki

Yao Wen Yeo

Paige Denise Youngerman (See also S.M., Course II) Impact of Part Proliferation on a High Mix Low Volume Manufacturing Environment

Yinan Yue

**David Parsons Zackheim** 

Juliana Zapata Ramírez

Xinhong Zeng

Keita Zenki

Yuezhi Zhan

Nick Zhao

Valerie Zhao Zhao

Jaime Zorrilla Sánchez de Neyra

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Fangyuan Liu (February, 2020)

Yi Liu

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Yongwei Zheng (February, 2020)

Yiran Zhou

Yutong Zhou

Zhiyu Zhou (February, 2020)

Kelly J. Zhu

## <u>Master of Science in</u> <u>Management Studies</u> Course XV-S

Sloan School of Management

Lucia Yiyi Chai A Direction and Business Plan for Developing and Commercializing Adult Incontinence Products in China

**Jingjing Jun** Competitive Analysis Of Digital Content And Knowledge Sharing Market For Adult Education In China

**Chee Swee Kek** The Hidden Costs of Rapid Economic Growth

Yunxuan Lu Study on China Non-Performing Loan

**Boxin Mou** Study on Social Media Marketing Campaign Strategy – TikTok and Instagram

**Ponce Ernest Pineda Samaniego** Analytics for Strategic Corporate Social Responsibility

Yuan Tian Case Studies on Companies that Delisted from US and Relisted in China

### **Tian Zeng**

The Competence Model of Producers as Managers and Entrepreneurs of Cross-Cultural Movie Crews

### Zhe Zhang

A Statistical Analysis of the Potential Impact of Boeing 737 MAX Crashes on Passenger Behavior

**Shirley Xueer Zhou** A Study of the Canadian Property Boom

**Jiale Zhu** The E-Sports Industry in China --Business Plan for Cuitimate

# Master of Science in

Management Research Course XV Sloan School of Management

## Natalie Berfeld

Do You Have to Adopt to Adopt? Evidence on IFRS Spillovers in Conglomerates

## Matthew P. Cashman (February, 2020)

Self-Signaling, Magical Thinking, and Spooky Causality in Economic Games

## Allison Cole

Cyclical Dynamics in Idiosyncratic Consumption Risk

Zaki Dernaoui Rising Technologies, Investment and Discount Rates

**Leonardo A. Elias** (September, 2019) Global Factors and the Pricing of Sovereign Risk

## Daniel Harris Elkind

(September, 2019) A Reinforcement Learning Algorithm for Dynamic Trading Execution in the Presence of Signals

## Carolyn Jiaming Fu

(February, 2020) Converging for Effective Exploration: How to Learn Across Unique Successes

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Accommodation-through-Bypassing: Overcoming Professionals' Resistance to the Implementation of Algorithmic Technology James P. Houghton (September, 2019) Why Meaning Matters for Belief Diffusion in Social Networks

**Pierre Jacques Jaffard** Lobbying as a Hedge on Political Risk: When Size Matters

Mahreen Khan (February, 2020) Are Worker Management Committees Improving Factory Conditions? A Study of Participation Committees in ILO's Better Work Factories

Olivia S. Kim The Economic Impact of Education Spending: Evidence from Self-Employed Households

Madhav Kumar Discount Bundling via Dense Product Embeddings

## Tianyi Li

Self-falsifiable Hierarchical Detection of Overlapping Communities On Social Networks

**Tse Yang Lim** The Road to Development is Paved with Good Intentions: Inter-Organizational Dysfunction in the UN Development System

Maarten Meeuwis (February, 2020) Portfolio Choice and Asset Pricing with Non-Homothetic Preferences

### James Corbett Mellody

Invisible Value: How Peripheral Functions Display Their Worth Using Narrative Action

Yury Olshanskiy Oligopolistic Market-Making and Inventory Heterogeneity

**Ethan J. Poskanzer** The Depth of the River: Student Matriculation Decisions and the Black-White College Completion Gap

### Lindsey Rebecca Raymond

(September, 2019) Predicting the Obvious: A Machine Learning Approach to Superstar Inventions

Georg Alexander Rickmann

(February, 2020) The Effect of Market Transparency on Corporate Disclosure Jad Georges Sassine How Network Structure Impacts Socially Reinforced Diffusion?

**Parinitha R. Sastry** Estimating Demand for Liquid Assets

**Bryan Seegmiller** Intermediation Frictions in Equity Markets

Albert Shin (February, 2020) Startup Valuation and the Venture Capital Syndication Hypothesis

Sebastian Steffen (February, 2020)

Occupational Change: Automation and Reskilling Risks

## Yupeng Wang

Fintech Mortgage Lenders Solving or Exploiting a Friction? Evidence on Risk Layering and Prepayment Risk of Conforming Loans

## Zhen Yang

Learning Who to Target with What via Adaptive Experimentation to Optimize Long-Term Outcomes

Yuting Zhu Dynamic Marketing Policies: Constructing Markov States for Reinforcement Learning

## Master of Science in Operations Research

### Katherine Lee Burnham

Information Fusion for an Unmanned Underwater Vehicle Through Probabilistic Prediction and Optimal Matching

## Or Dan

(See also M.B.A., Course XV) Improving Prior Knowledge Assessment in Process Characterization

## Matt Vincent Lewis Emschwiller

Understanding Neural Network Sample Complexity and Interpretable Convergence-Guaranteed Deep Learning with Polynomial Regression

## Justin W. Graham

School Choice: A Discrete Optimization Approach Galit Lukin Prescriptive Methods for Adaptive Learning

**Colin Alex McIntyre** (See also M.B.A., Course XV) Optimizing Inbound Freight Mode Decisions

## Julie Poullet

Leveraging Machine Learning to Solve the Vehicle Routing Problem with Time Windows

## Rebecca Zhang

(September, 2019) Interpretable Machine Learning Methods for Stroke Prediction

# SCHOOL OF ARCHITECTURE AND PLANNING, DOCTORAL

## **Doctor of Philosophy**

School of Architecture and Planning

## Dhamnidhi Dhaval Kumar Adjodah

(September, 2019) Thesis in the field of Media Arts and Sciences: Social Inductive Biases for Reinforcement Learning

#### Jesus Ricardo Alvarez Felix

Thesis in the field of Urban and Regional Planning submitted to the Department of Urban Studies and Planning: Sensing Lights: Transforming Street Lights into a Networked Urban Knowledge Platform

#### Nisa Ari

(September, 2019) Thesis in the field of Architecture: History and Theory of Art submitted to the Department of Architecture: Cultural Mandates, Artistic Missions, and "The Welfare of Palestine," 1876– 1948

#### Andrea Karin Beck

Thesis in the field of Sustainable Development submitted to the Department of Urban Studies and Planning: Water Operator Partnerships: Utility Reform and the Struggle for Alternatives to Privatization

## Yasmin Bijani

(September, 2019) Thesis in the field of Environmental Policy and Planning submitted to the Department of Urban Studies and Planning: Pursuing the Common Good: Overcoming Barriers to Collective Action through Transboundary Water Negotiation along the Blue Nile River

#### **Benjamin Arthur Philips Bloomberg** (February, 2020)

Thesis in the field of Media Arts and Sciences: Making Musical Magic Live: Inventing Modern Production Technology for Human-Centric Music Performance

### Lilian D. Bui

(February, 2020) Thesis in the field of Urban and Regional Planning submitted to the Department of Urban Studies and Planning: Centering Peripheries: Warning Systems and Disaster Risk Reduction Planning on the Island City

#### Samuel Eli Calisch

(September, 2019) Thesis in the field of Media Arts and Sciences: Folded Functional Foams

#### Matthew Eli Carney

(February, 2020) Thesis in the field of Media Arts and Sciences: Design and Evaluation of a Reaction-Force Series Elastic Actuator Configurable as Biomimetic Powered Ankle and Knee Prostheses

## Matthew Christopher Claudel

Thesis in the field of Advanced Urbanism submitted to the Department of Urban Studies and Planning: How Cities Learn: Urban Experimentation for Creating and Governing Technology

#### **Pierre Emmanuel Cuvilliers**

Thesis in the field of Architecture: Building Technology submitted to the Department of Architecture: The Constrained Geometry of Structures: Optimization Methods for Inverse Form-Finding Design

## Jackson Struthers Davidow

(September, 2019) Thesis in the field of Architecture: History and Theory of Art submitted to the Department of Architecture: Viral Visions: Art, Activism, and Epidemiology in the Global AIDS Pandemic

### Laura Humm Delgado

Thesis in the field of Urban and Regional Planning submitted to the Department of Urban Studies and Planning: Branching Out into Immigrant Neighborhoods: How Public Libraries Distribute Community Resources to Meet Immigrant Needs

## Artem Dementyev

(September, 2019) Thesis in the field of Media Arts and Sciences: Dynamic Wearable Technology: Designing and Deploying Small Climbing Robots for Sensing and Actuation on the Human Body

#### Jorge Duro Royo

(September, 2019) Thesis in the field of Media Arts and Sciences: Fabrication Information Modeling

## Daniel Gallagher

(September, 2019) Thesis in the field of Urban Planning and International Development submitted to the Department of Urban Studies and Planning: Enduring or Escaping Legacies? Politics, Inherited Institutions, and Rebellion in the Struggle Over Water Futures in Chile

### Jessica Alexandra Gordon

(September, 2019) Thesis in the field of Environmental Policy and Planning submitted to the Department of Urban Studies and Planning: Red Lines for a Green China: Adaptation, Negotiation and Experimentation in China's Efforts to Transform Sustainably

#### Jason Matthew Haas

(September, 2019) Thesis in the field of Media Arts and Sciences: Committee of N: Playful Design in Teacher Education

#### **Elise Schley Harrington**

Thesis in the field of Environmental Policy and Planning submitted to the Department of Urban Studies and Planning: Intermediaries and Electrification: Dimensions of Trust and Consumer Education in Kenya's Off-Grid Solar Market

#### Suzanne Elisa Harris-Brandts

Thesis in the field of Urban and Regional Studies submitted to the Department of Urban Studies and Planning: Constructing the Capital City: The Politics of Urban Development and Image Making in Eurasia's Hybrid Regimes

### Natasha Jaques

(February, 2020) Thesis in the field of Media Arts and Sciences: Social and Affective Machine Learning

#### Sundeep Kumar Jolly

(September, 2019) Thesis in the field of Media Arts and Sciences: Holographic Augmented Reality: Towards Near-to-Eye Electroholography via Guided-Wave Acousto-Optics

### Rébecca Henriette Marie Franca Kleinberger

Thesis in the field of Media Arts and Sciences: Vocal Connection: Rethinking the Voice as a Medium for Personal, Interpersonal, and Interspecies Understanding

### Haegi Kwon

(September, 2019)

Thesis in the field of Urban and Regional Studies submitted to the Department of Urban Studies and Planning: Fighting for Recognition: Asian American Advocates and Their Strategic Uses of Identity

## Will Kai Langford

(September, 2019) Thesis in the field of Media Arts and Sciences: Discrete Robotic Construction

### Yan Leng

Thesis in the field of Media Arts and Sciences: Collective Behavior over Social Networks with Data-driven and Machine Learning Models

### Mohammad Omar Masud

Thesis in the field of Urban and Regional Studies submitted to the Department of Urban Studies and Planning: Inside the App Bureaucracy: The Use of Smartphone Apps in Public Service Delivery Organizations in Pakistan

### Paul Mayencourt

(February, 2020) Thesis in the field of Architecture: Building Technology submitted to the Department of Architecture: Mass

Reduction: Opportunities and Structural Optimization Methods to Reduce Material Use in Mass Timber Buildings

### Philippa Jane Mothersill

(February, 2020) Thesis in the field of Media Arts and Sciences: Towards Digital Liminality: Computational Tools for 'Beyond Average' Creative Thinking

## Alejandro Noriega Campero

(September, 2019) Thesis in the field of Media Arts and Sciences: Human and Artificial Intelligence in Decision Systems for Social Development

## Prashant Jaya-Tarachand Patil

(September, 2019) Thesis in the field of Media Arts and Sciences: Laser Direct-Write Fabrication of MEMS

#### Prassanna Raman

Thesis in the field of International Development submitted to the Department of Urban Studies and Planning: The Politics of Visibility in Urban Sanitation: Bureaucratic Coordination and the Swachh Bharat Mission in Tamil Nadu, India

## Karthik Rao Cavale

(February, 2020) Thesis in the field of Urban and Regional Studies submitted to the Department of Urban Studies and Planning: The Production of Rurality: Social and Spatial Transformations in the Tamil Countryside 1915-65

### Jeffrey Laurence Rosenblum

Thesis in the field of Urban and Regional Planning submitted to the Department of Urban Studies and Planning: Expanding Access to the City: How Public Transit Fare Policy Shapes Travel Decision Making and Behavior of Low-Income Riders

## Spencer Franklin Russell

Thesis in the field of Media Arts and Sciences: Resynthesizing Volumetric Soundscapes: Low-Rank Subspace Methods for Soundfield Estimation and Reconstruction

### Sunanda Sharma

Thesis in the field of Media Arts and Sciences: Designing the Organism-Environment Relationship

## Faizan Jawed Siddiqi

(February, 2020) Thesis in the field of Urban Studies and Planning submitted to the Department of Urban Studies and Planning: Realizing Dignity: Dalit Rights, Land Reform, and the Learning of Democratic Citizenship

## Ivan Sergeevich Sysoev

Thesis in the field of Media Arts and Sciences: Digital Expressive Media for Supporting Early Literacy through Child-Driven, Scaffolded Play

### **Cameron Roy Taylor**

Thesis in the field of Media Arts and Sciences: Magnetomicrometry: Tissue Length Tracking via Implanted Magnetic Beads

### Sara Ann Taylor

Thesis in the field of Media Arts and Sciences: Forecasting Mental Distress Using Healthcare Claims Data

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(September, 2019) Thesis in the field of Urban Planning, Policy and Design submitted to the Department of Urban Studies and Planning: High-Density Parenting: Design, Policy, and Family-oriented Urbanism

## Shenhao Wang

(February, 2020) Thesis in the field of Computer and Urban Science submitted to the Department of Urban Studies and Planning: Deep Neural Networks for Choice Analysis

## Anneli Rane Woolf

Thesis in the field of Media Arts and Sciences: Discovering the Meaning Behind the Story: Creating a System for Documenting and Supporting Children's Narrative Development

## Çağrı Hakan Zaman

(February, 2020) Thesis in the field of Architecture: Design and Computation submitted to the Department of Architecture: Spatial Experience in Humans and Machines

# SCHOOL OF ENGINEERING, DOCTORAL

## **Doctor of Philosophy**

School of Engineering

## Michael John Acton

(February, 2020) Thesis in the field of Nuclear Science and Engineering: Computational Fluid Dynamics and Turbulence Model Uncertainty Quantification for Nuclear Reactor Safety Applications

#### Ganesh Ajjanagadde

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Fourier Analysis on the Hypercube, the Coefficient Problem, and Applications

#### Joshua H. Alman

(September, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Linear Algebraic Techniques in Algorithms and Complexity

## **David Alvarez Melis**

(September, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Optimal Transport in Structured Domains: Algorithms and Applications

#### **Raichelle Joy Aniceto**

(February, 2020) Thesis in the field of Space Systems submitted to the Department of Aeronautics and Astronautics: 100 Gbps Optical Coherent Modem for Low Earth Orbit Optical Inter-Satellite Links

### Nicha Apichitsopa

Thesis in the field of Electrical Engineering and Computer Science: Large-Area Cell-Tracking Cytometry for Biophysical Measurements of Single Cells

#### Venkata Narayana Murthy Arelekatti

(September, 2019) Thesis in the field of Mechanical Engineering: Frameworks for the Design of Passive Prosthetic Knee Components Using User-centered Methods and Biomechanics of Level-ground Walking

#### Naveed Ali Bakh

Thesis in the field of Chemical Engineering: In Vivo Translation of Near Infrared Fluorescent Semiconducting Single Walled Carbon Nanotube Sensors: Theoretical and Experimental Applications

### Ashvin Reddy Bashyam

(September, 2019) Thesis in the field of Electrical Engineering and Computer Science: Portable Magnetic Resonance Sensors and Methods for Noninvasive Disease Diagnostics

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(February, 2020) Thesis in the field of Computational and Systems Biology: Machine Learning for Understanding Protein Sequence and Structure

## Nikhil Gaurev Bhargava

(February, 2020) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Multi-Agent Coordination Under Limited Communication

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(February, 2020) Thesis in the field of Mechanical Engineering and Computation submitted to the Department of Mechanical Engineering: A Two-Step Port-Reduced Reduced-Basis Component Method for Time Domain Elastodynamic PDE with Application to Structural Health Monitoring

#### Gerardo Bledt

(February, 2020) Thesis in the field of Mechanical Engineering: Regularized Predictive Control Framework for Robust Dynamic Legged Locomotion

## Joseph Richard Brady

Thesis in the field of Chemical Engineering: A Multi-Omics Approach to Improving Productivity of Therapeutic Proteins in *Pichia pastoris* (*Komagataella phaffii*)

#### **Alexander Thomas Brown**

(February, 2020) Thesis in the field of Biological Engineering: Design of Engineerable Biomaterial Microenvironments for the Advancement of *in vitro* Human Tissue Models

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(September, 2019) Thesis in the field of Engineering Systems: Rate Design for the 21st Century: Improving Economic Efficiency and Distributional Equity in Electricity Rate Design

## Colin G. Buss

(February, 2020) Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Nanomaterial-Mediated Immune Interactions for Disease Diagnosis and Cancer Immunotherapy

## Yinan Cai

(September, 2019) Thesis in the field of Nuclear Science and Engineering: A Framework for Analyzing Nuclear Power Multiunit Accident Scenarios and Providing Accident Mitigation and Site Improvement Suggestions

#### Andrew Harvey Caldwell

(February, 2020) Thesis in the field of Materials Science and Engineering: Alternating Current Voltammetry of High Temperature Electrolysis Reactions

#### Norman Ming-Chen Cao

Thesis in the field of Applied Plasma Physics submitted to the Department of Nuclear Science and Engineering: Characterization of a Turbulence Bifurcation Underlying L-mode Confinement Transitions on Alcator C-Mod

## Hugh Alexander Carson

(February, 2020) Thesis in the field of Computational Science and Engineering: Provably Convergent Anisotropic Output-Based Adaptation for Continuous Finite Element Discretizations

#### Seth Allen Cazzell

Thesis in the field of Polymers and Soft Matter submitted to the Department of Materials Science and Engineering: Engineering Gelation in Metal Ion Cross-Linked Hydrogels

#### Wui Yarn Chan

(September, 2019) (See also S.M., Course X-A) Thesis in the field of Chemical Engineering: Sustainable Materials from Renewable Protein Feedstock and Waste Rubber

## Ken Chang

Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Enhancing Medical Imaging Workflows with Deep Learning

#### Christy Chao

(February, 2020) Thesis in the field of Chemical Engineering: Analysis of DNA Damage and Repair Responses in Cerium Exposed Cells and Hepatocyte Spheroids

#### Nikhil Narsingh Chavan Dafle

Thesis in the field of Mechanical Engineering: Dexterous Manipulation with Simple Grippers

#### Jialiang Chen

(September, 2019) Thesis in the field of Civil and Environmental Engineering: Effect of Scale and Spatial Variability on Surface Foundations on Sand

#### Mo Chen

(February, 2020) Thesis in the field of Quantum Science and Engineering submitted to the Department of Mechanical Engineering: Hardware-Efficient Quantum Error Correction with Nitrogen-Vacancy Centers

## Tianyi Chen

(September, 2019) Thesis in the field of Mechanical Engineering: Next-Generation Dedicated Outdoor Air Cooling Systems for Low-Energy Buildings

#### Craig B. Cheney

(February, 2020) Thesis in the field of Mechanical Engineering: Development of a Miniature, Low Power, Solid State, Continuously Sensitive, Diffusion Cloud Chamber

#### Li-Chiun Cheng

Thesis in the field of Chemical Engineering: Structure, Rheology and Applications of Thermally-Gelling Nanoemulsions

## Mei Yi Cheung

(September, 2019) Thesis in the field of Mechanical Engineering: Underwater Multi-Vehicle Co-operative Target-Tracking

#### Arnav Chhabra

(September, 2019) Thesis in the field of Health Sciences and Technology submitted to the Harvard-MIT Program in Health Sciences and Technology: Building Blocks for Regenerative Medicine: Vascularized Models and Immunomodulation to Engineer Hepatic Cell Therapies

## Byung Gu Cho

(February, 2020) Thesis in the field of Ocean Engineering submitted to the Department of Mechanical Engineering: Predicting the Effects of Random Ocean Dynamic Processes on Underwater Acoustic Sensing and Communication

#### Te-Chun Chu

Thesis in the field of Chemical Engineering: Revealing Aromatics Formation in Combustion Using Experimental and Modeling Methods

#### Hyung Won Chung

(February, 2020) Thesis in the field of Mechanical Engineering: Technoeconomic Analysis of Pressure-Retarded Osmosis

#### Sebastian Claici

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Structure as Simplification: Transportation Tools for Understanding Data

## Theresa Kruse Cloutier

Thesis in the field of Chemical Engineering: Computational Design of Therapeutic Monoclonal Antibody Formulations

#### Anne Collin

(September, 2019) Thesis in the field of Autonomous Systems submitted to the Department of Aeronautics and Astronautics: A Systems Architecture Framework towards Hardware Selection for Autonomous Navigation

#### Laura Ellen Crowell

Thesis in the field of Chemical Engineering: Accelerating Process Development forBiologics on an Automated, Pharmacy-Scale Manufacturing System

## Wenhan Dai

(February, 2020) Thesis in the field of Communications and Networks submitted to the Department of Aeronautics and Astronautics: Quantum Networks: State Transmission and Network Operation

## Pratik K. Davé

(February, 2020) Thesis in the field of Space Systems submitted to the Department of Aeronautics and Astronautics: Autonomous Navigation of Distributed Spacecraft using Intersatellite Laser Communications

#### Karen Margaret Dawson

(September, 2019) Thesis in the field of Nuclear Science and Engineering: A Framework to Assess the Economic and Uncertainty Implications for Technologies for Use in Decarbonization

#### Nicholas Thomas Dee

(February, 2020) Thesis in the field of Mechanical Engineering: In Situ Monitoring and Control of Carbon Nanotube Synthesis

## Akshay Dhananjai Degwekar

(September, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: On Foundations of Public-Key Encryption and Secret Sharing

#### Íñigo del Portillo Barrios

(February, 2020) Thesis in the field of Communications and Networks submitted to the Department of Aeronautics and Astronautics: Space and Aerial Architectures to Expand Global Connectivity

### **Etienne Demarly**

(February, 2020) Thesis in the field of Nuclear Science and Engineering: A New Approach to Predicting Departure from Nucleate Boiling (DNB) from Direct Representation of Boiling Heat Transfer Physics

#### Mo Deng

Thesis in the field of Electrical Engineering and Computer Science: Deep Learning with Physical and Power-Spectral Priors for Robust Image Inversion

#### Guillermo Fabián Díaz Lankenau

(February, 2020) Thesis in the field of Mechanical Engineering: Tractor Design for Small Farms in Resource Limited Markets

#### Sai Nishanth Dikkala

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Tacking Dependence Among Samples Via Structured High-Dimensional Distributions

#### Christina Vy Dinh

(February, 2020) Thesis in the field of Chemical Engineering: Development of Quorum-Sensing Circuits for Metabolic Flux Control in Escherichia Coli

## Daniel S. Dorsch

(September, 2019) Thesis in the field of Mechanical Engineering: Design of High Performance Hybrid Transmissions

### Justin M. Dove

Thesis in the field of Electrical Engineering and Computer Science: Theory of Phasor-Field Imaging

## Shelby Kathleen Doyle

(February, 2020) Thesis in the field of Biological Engineering: Modulating Oncogenic Transcription with Small Molecules

## Aaron James Dy

(September, 2019) Thesis in the field of Biological Engineering: Cell-free Synthetic Biology for Affordable, On-demand Diagnostics

### **Markus Einzinger**

(February, 2020) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Excitonic Spin Engineering for Solar Cells and Organic Light-Emitting Diodes

## Eric Richard Fadel

Thesis in the field of Materials Science and Engineering: Highly Accurate Computational Methods For Lithium-Ion Battery Materials

#### Nima Fazeli

(September, 2019) Thesis in the field of Mechanical Engineering: Inference and Learning for Rigid-Body Models of Manipulation

## Henry Alan Fingerhut

(February, 2020) Thesis in the field of Engineering Systems: Technology, Management, and Policy submitted to the Engineering Systems Division: Individual and Organizational Uses of Evidence-Based Practice in Healthcare Settings

#### Michael Samuel Fleder

(September, 2019) Thesis in the field of Electrical Engineering and Computer Science: Forecasting Financials and Discovering Menu Prices with Alternative Data

### **Peter Raymond Florence**

(February, 2020) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Dense Visual Learning for

#### Mojtaba Forghani

Robot Manipulation

(September, 2019) Thesis in the field of Mechanical Engineering and Computation submitted to the Department of Mechanical Engineering: An Inverse Problem Framework for Reconstruction of Phonon Properties Using Solutions of the Boltzmann Transport Equation

### **Christopher Foy**

Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Solid-State Spin-Integrated Circuits for Quantum Sensing and Control

#### Matthias Freiherr von Andrian-Werburg

Thesis in the field of Chemical Engineering: Fast Stochastic Model Predictive Control under Parametric Uncertainties

#### Xinkai Fu

(September, 2019) Thesis in the field of Materials Science and Engineering: Assessing Byproduct Mining and Metal Recyclig as Indicators of Material Criticality

## **Paul Anthony Gabrys**

Thesis in the field of Materials Science and Engineering: Controlling Structure Across Length Scales with Directed Assembly of Colloidal Nanoparticles

#### **Preetinder Garcha**

Thesis in the field of Electrical Engineering and Computer Science: Low Power Circuits with Integrated Magnetics for Sensors and Energy Harvesting Systems

## Derek Ray Gaston

(February, 2020) Thesis in the field of Computational Nuclear Science and Engineering: Parallel, Asynchronous Ray-Tracing for Scalable, 3D, Full-Core Method of Characteristics Neutron Transport on Unstructured Mesh

### Joseph Emilio Gaudio

Thesis in the field of Mechanical Engineering: Fast Learning and Adaptation in Control and Machine Learning

## Roman O. Geykhman

(September, 2019) Thesis in the field of Aeronautics and Astronautics: The Effect of Differential Color Refraction on Astrometric Observations of Solar System Bodies and Earth Satellites from Ground-Based Optical Telescopes

### Henri-Louis Jean-Paul Girard

(February, 2020) Thesis in the field of Mechanical Engineering: Interactions at Interfaces Across Scales: from Adsorption to Adhesion

### Mark Jacob Goldman

(February, 2020) Thesis in the field of Chemical Engineering: Illuminating Reaction Pathways in Low-Temperature Combustion, Pyrolysis & Atmospheric Oxidation

#### Sarah Ann Goodman

(February, 2020)

Thesis in the field of Materials Science and Engineering: Nanostructured Materials Towards High-Efficiency Visible and Ultraviolet Light Emitting Diodes: Structure-Property Correlation on the Nanoscale

## Grace Swee See Goon

Thesis in the field of Materials and Structures submitted to the Department of Aeronautics and Astronautics: Deformation-Assisted Antifouling of Surfaces

#### **Colin Andreas Grambow**

Thesis in the field of Chemical Engineering: Automated Discovery of Important Chemical Reactions

#### **Daniel Thomas Grier**

(September, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Three Complexity Classification Questions at the Quantum/Classical Boundary

#### Zongyu Gu

(September, 2019) Thesis in the field of Chemical Engineering: Physics-Based Models of Hysteresis in Multiphase Flow in Porous Media

## Jacob William Guggenheim

(February, 2020) Thesis in the field of Mechanical Engineering: Contributions of the Human Operator to Supernumerary Robotic Limbs

#### Ishan Gupta

(September, 2019) Thesis in the field of Biological Engineering: Increasing the Optical Transparency of a Living Mouse Brain (And Other Nanotechnologies)

### David Henry Hagan

(February, 2020) Thesis in the field of Environmental Chemistry submitted to the Department of Civil and Environmental Engineering: Measuring Ambient Air Quality Using Low-Cost Sensors

#### Bashar M. Hamza

(February, 2020) Thesis in the field of Electrical Engineering and Computer Science: An Optofluidic Platform for Longitudinal Circulating Tumor Cell Studies in Mouse Models of Cancer

#### Yafei Han

(September, 2019) Thesis in the field of Transportation submitted to the Department of Civil and Environmental Engineering: Neural-Embedded Discrete Choice Models

#### Yiou He

(February, 2020) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Towards Lightweight High-Voltage Power Conversion

#### Marek Hempel

Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Technology and Applications of 2D Materials in Microand Macroscale Electronics

#### Wee Teck William Ho

Thesis in the field of Chemical Engineering: Orthotopic Liver Metastasis Mouse Models of Mismatch Repair-Proficient Colorectal Cancer Recapitulate Clinical Inefficacy of Immune Checkpoint Blockade

#### Francois Robert Hogan

(February, 2020) Thesis in the field of Mechanical Engineering: Reactive Manipulation with Contact Models and Tactile Feedback

## Hajir Hosseini Roozbehani

(September, 2019) Thesis in the field of Communications and Networks submitted to the Department of Aeronautics and Astronautics: Graceful Codes: Fundamental Limits and Constructions

### I-Yun Lisa Hsieh

Thesis in the field of Chemical Engineering: Insights into Future Electric Mobility

#### Chen-Yu Hsu

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Passive Sensing of User Behavior and Well-Being at Home

#### Wei-Ning Hsu

Thesis in the field of Electrical Engineering and Computer Science: Speech Processing with Less Supervision: Learning from Weak Labels and Multiple Modalities

## Zhi Hu

Thesis in the field of Electrical Engineering and Computer Science: Large-Scale High-Density Terahertz Radiator and Receiver Arrays on Silicon Chips

### Arthur C. Huang

(February, 2020) Thesis in the field of Aerospace Computational Engineering submitted to the Department of Aeronautics and Astronautics: An Adaptive Variational Multiscale Method with Discontinuous Subscales for Aerodynamic Flows

#### Junbin Huang

Thesis in the field of Mechanical Engineering and Computation submitted to the Department of Mechanical Engineering: New Overlapping Finite Elements and Their Application in the AMORE Paradigm

### Mantao Huang

Thesis in the field of Materials Science and Engineering: Voltage Control of Electrical, Optical and Magnetic Properties of Materials by Solid State Ionic Transport and Electrochemical Reactions

### Yi Huang

Thesis in the field of Mechanical Engineering: Spectral Engineering for Solar-Thermal and Thermal-Radiative Systems

### Fatima Aysha Hussain

Thesis in the field of Environmental Microbiology submitted to the Department of Civil and Environmental Engineering: Virus-Driven Evolution of Marine *Vibrio* 

### Karine Ip Kiun Chong

(September, 2019) Thesis in the field of Mechanical Engineering: Holistic Modeling and Evaluation of Material Recovery from Materially-Complex End-of-Life Vehicles

### Jon Paul Janet

(February, 2020) Thesis in the field of Chemical Engineering and Computation: Multifidelity Methods for Design of Transition Metal Complexes

### Mark Christopher Jeffrey

(February, 2020) Thesis in the field of Electrical Engineering and Computer Science: A Hardware and Software Architecture for Pervasive Parallelism

### **Taehoon Jeong**

Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Secure Analogto-Digital Conversion Against Power Side-Channel Attack

### Ana Jevtić

Thesis in the field of Electrical Engineering and Computer Science: Advanced Methods for Cyber-Attack Detection and Resilient State Estimation in Power Systems

### Pritish Kamath

(February, 2020) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Some Hardness Escalation Results in Computational Complexity Theory

### Sai Nithin Reddy Kantareddy

Thesis in the field of Mechanical Engineering: Introducing Perovskites to the IoT World Using Photovoltaic-Powered ID Tags

### Jian-An Ke

Thesis in the field of Materials Science and Engineering: Guided Etching and Deposition of Transition Metal Dichalcogenides

### Jared Scott Kehe

Thesis in the field of Biological Engineering: Massively Parallel Combinatorial Microbiology

### Sami Khan

(February, 2020) Thesis in the field of Mechanical Engineering: Towards Impacting Electrochemical Phenomena Using Interfacial Engineering

### Aliza Khurram

Thesis in the field of Mechanical Engineering: Combined CO2 Capture and Electrochemical Conversion in Non-Aqueous Environments

### Deokhwan Kim

(September, 2019) Thesis in the field of Electrical Engineering and Computer Science: Verification of Correctness Properties of Programs that Read Input Files

### Donghyun Kim

Thesis in the field of Mechanical Engineering: Design and Development of Desktop Fiber and Fabric Manufacturing System for Advanced Materials

### Joseph Kim

(February, 2020) Thesis in the field of Autonomous Systems submitted to the Department of Aeronautics and Astronautics: Plan Summarization for Decision Support in Human Team Planning

### Sungjin Kim

Thesis in the field of Materials Science and Engineering: Utilizing Bioinspired Metal-Coordinate Bonding in the Solidification of Soft Gels via Crosslinking, Dehydration and Mineralization

### Yunjo Kim

Thesis in the field of Mechanical Engineering: Interface Engineering for Exfoliation and Integration of Heteroepitaxial III-V Films

### Jesse D. Kirkpatrick

Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Protease activity sensors for noninvasive diagnosis and monitoring of pulmonary diseases

### Derek M. Kita

(February, 2020) Thesis in the field of Materials Science and Engineering: Integrated Photonic Devices for Spectroscopic Chemical Detection

### Fredrik Berg Kjølstad

(February, 2020) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Sparse Tensor Algebra Compilation

### Magdalena Maria Klemun

(February, 2020) Thesis in the field of Engineering Systems: Soft and Hard Factors Affecting the Performance Evolution of Low-Carbon Energy Technologies

### Frans Anton Koolen

(February, 2020) Thesis in the field of Electrical Engineering and Computer Science: Balance Control and Locomotion Planning for Humanoid Robots Using Nonlinear Centroidal Models

### Akshata Krishnamurthy

(February, 2020) Thesis in the field of Space Systems submitted to the Department of Aeronautics and Astronautics: Instrument Systematics Calibration and Performance Validation for High Precision Photometry Missions

### Adam QingYang Kuang

(September, 2019) Thesis in the field of Applied Plasma Physics submitted to the Department of Nuclear Science and Engineering: Measurements of Divertor Target Plate Conditions and Their Relationship to Scrape-Off Layer Transport

### Omar Labban

Thesis in the field of Mechanical Engineering: Development of Chemical-Free Methods of Fouling Mitigation for Membrane Processes in Desalination

### Erica L. Lai

(February, 2020)

Thesis in the field of Polymers and Soft Matter submitted to the Department of Materials Science and Engineering: Deciphering How the Viscoelastic Properties of Mussel-inspired Metalcoordinate Hydrogels Dictate Their Adhesive and Interfacial Mechanics

### Kristen Rio LaVigne

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Relationships Between Functionality, Security, and Privacy

### David Layden

Thesis in the field of Quantum Science and Engineering submitted to the Department of Nuclear Science and Engineering: Device- and Application-Adapted Quantum Error Correction

### David Lazar

(February, 2020) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Strong and Scalable Metadata Security for Voice Calls

### Ilia Andreevich Lebedev

(February, 2020) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Trust Less: Shrinking the Trusted Parts of Trusted Systems

### Hin Yeung Lee

Thesis in the field of Nuclear Science and Engineering: Multiple Monoenergetic Gamma Radiography (MMGR) Using Compact Superconducting Cyclotron

### Hyodong Lee

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Topographic Deep Artificial Neural Network as a Model of Primate Ventral Visual Stream

### Jinwook Lee

(September, 2019) Thesis in the field of Air-Breathing Propulsion submitted to the Department of Aeronautics and Astronautics: Characterization and Mitigation of Blade Waviness Effects on Fan Performance

### Michael Andrew Lee

(September, 2019) Thesis in the field of Chemical Engineering: In Vivo Steroid Sensing Using Corona Phase Molecular Recognition: Design, Synthesis, and Applications

### William Mitchell Leiserson

(February, 2020) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Defining Scalable High Performance Programming with DEF

### Chengtao Li

(February, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Diversity-Inducing Probability Measures for Machine Learning

### Duanhui Li

(September, 2019) Thesis in the field of Materials Science and Engineering: Micro Optics for Micro Hybrid Concentrator Photovoltaics

### Zhuoxuan Li

(February, 2020) Thesis in the field of Mechanical Engineering: Open Source Hardware Entrepreneurship

### Youzhi Liang

(February, 2020) Thesis in the field of Mechanical Engineering: Analysis and Algorithms for Parametrization, Optimization and Customization of Sled Hockey Equipment and Other Dynamical Systems

### Kathy S. Lin

(February, 2020) Thesis in the field of Computational and Systems Biology: Biochemically Informed Modeling of miRNA Targeting Efficacy

### Shaoting Lin

(September, 2019) Thesis in the field of Mechanical Engineering: Tissue-like Hydrogels by Design

### Yuxuan Lin

(September, 2019) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Infrared Detectors Based on Two-Dimensional Materials and Heterostructures

### William Robin Lindemann

Thesis in the field of Materials Science and Engineering: Dynamics Characterization for Designing Functional Soft Materials

### Changyang Linghu

(February, 2020) Thesis in the field of Electrical Engineering and Computer Science: Spatially Organized Fluorescent Reporters for Recording Complex Biological Dynamics in Cell Population

### Mengjie Liu

(February, 2020) Thesis in the field of Chemical Engineering: Predictive Modeling of Polycyclic Aromatic Hydrocarbon Formation During Pyrolysis

### Tianren Liu

(September, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Breaking Barriers in Secret Sharing

### Yun Liu

(September, 2019) Thesis in the field of Materials Science and Engineering: First-principles Studies of Defects in Colloidal Nanocrystals

### Zhaoyuan Liu

(February, 2020) Thesis in the field of Nuclear Science and Engineering: Cumulative Migration Method for Computing Multi-Group Transport Cross Sections and Diffusion Coefficients with Monte Carlo Calculations

### Alan Everett Long

(See also M.B.A., Course XV) Thesis in the field of Chemical Engineering Practice submitted to the Department of Chemical Engineering: A Study of Strained Extinction for Applications in Natural Gas Combustion Modeling

### Erin Elizabeth Looney

Thesis in the field of Mechanical Engineering: Accelerating Cleantech Hardware Product Development

### Daniel Lopez Martinez

(February, 2020) Thesis in the field of Health Sciences and Technology submitted to the Harvard-MIT Program in Health Sciences and Technology: Machine Learning for Pain Assessment and Management

### Christopher J. Love

(February, 2020) Thesis in the field of Mechanical Engineering: An Injectable, Biomaterialbased Therapy to Promote Endogenous Neural Progenitor Cells in a Hemorrhagic Stroke Lesion

### Yu Ma

Thesis in the field of Mechanical Engineering: Machine Learning in Ocean Applications: Wave Prediction for Advanced Controls of Renewable Energy and Modeling Nonlinear Viscous Hydrodynamics

### **Thomas Stephen Mahony**

Thesis in the field of Electrical Engineering and Computer Science: A Hybrid Approach Towards On-Chip Visible Lasers

### Dhanushkodi D. Mariappan

(September, 2019) Thesis in the field of Mechanical Engineering: Nanoporous Flexographic Printing: Fundamentals, Applications and Scale-up

### Erica Ellis Mason

(February, 2020) Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Magnetic Particle Imaging for Intraoperative Breast Cancer Margin Assessment and Functional Brain Imaging

### Samantha A. McBride

(February, 2020) Thesis in the field of Mechanical Engineering: Controlling Crystallization via Interfacial Engineering: Patterning, Fouling-Inhibition, and Nutrient Recovery

### Saeed Mehraban

(September, 2019) Thesis in the field of Electrical Engineering and Computer Science: The Computational Complexity of Sampling from a Weak Quantum Computer

### Hayden Metsky

(February, 2020) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Design Methods for Sensitive and Comprehensive Microbial Surveillance

### Jinghui Miao

Thesis in the field of Materials Science and Engineering: Lithiation-induced Phase Transitions in Alloying Anodes for Thin Film Lithium-ion Batteries

### Xia Miao

(February, 2020) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Toward Distributed Control for Autonomous Electrical Energy Systems

### Aleksandar S. Mijailovic

Thesis in the field of Mechanical Engineering: Measurement and Modeling of Brain Tissue and Engineered Polymer Response to Concentrated Impact Loading

### Paolo Minelli

(February, 2020) Thesis in the field of Nuclear Science and Engineering: Improved Methods for Managing Megaprojects

### Marco Alexander Miotti

(February, 2020) Thesis in the field of Engineering Systems: Variability in the Emissions Savings Potential of Battery Electric Vehicles Across Regions and Individuals

### Yiming Mo

(September, 2019) Thesis in the field of Chemical Engineering: Continuous Processing of Multiphase Reactions for Pharmaceutical Applications

# Seyed Sina Moeini Ardakani

(September, 2019) Thesis in the field of Structures and Materials submitted to the Department of Civil and Environmental Engineering: Light Interstitials in Iron Under Extreme Mechanical Conditions

### Brinda Monian

(February, 2020) Thesis in the field of Chemical Engineering: Bioinformatic Tools for Single-Cell Clinical Studies in Food Allergy

# Justin Bruce Montgomery

(February, 2020) Thesis in the field of Civil Engineering and Computation submitted to the Department of Civil and Environmental Engineering: Enhancement of Unconventional Oil and Gas Production Forecasting Using Mechanistic-Statistical Modeling

### Apoorva Murarka

(September, 2019) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Nanoscale Membranes For Electromechanical Systems

### Antoni Maria Musolas Otaño

Thesis in the field of Computational Science and Engineering: Covariance Estimation on Matrix Manifolds

### Maxwell Benjamin Nagarajan

Thesis in the field of Chemical Engineering: Microengineered Hydrogels for Spatially Resolved, Multiplexed MicroRNA Quantification from Tissue

### Sara Nicole Nagelberg

(February, 2020) Thesis in the field of Mechanical Engineering: Dynamic and Stimuli-Responsive Multi-Phase Emulsion Droplets for Optical Components

### Sumaiya Nazeen

(September, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Computational Methods for Functional Interpretation of Diverse Omics Data

### Khoi Thien Nguyen

Thesis in the field of Biological Engineering: Epigenetic Determinants of Cellular Differentiation, Transcriptional Reprogramming, and Human Disease

### Le Thanh Tu Nguyen

Thesis in the field of Biological Engineering: Engineering the Human Gut Microbiome Through Personalized Interventions

### Xinchen Ni

(February, 2020) Thesis in the field of Mechanical Engineering: Nanoengineered Hierarchical Advanced Composites with Nanofiber Interlaminar Reinforcement for Enhanced Laminate-Level Mechanical Performance

### **David Andrew Nicholson**

(February, 2020) Thesis in the field of Chemical Engineering: Molecular Simulation of Nucleation from Flowing Polymer Melts

### James Noraky

Thesis in the field of Electrical Engineering and Computer Science: Algorithms and Systems for Low Power Time-of-Flight Depth Sensing

### Noele Rosalie Norris

(September, 2019) Thesis in the field of Electrical Engineering and Computer Science: Mechanistic Modeling of Bacterial Nutrient Uptake Strategies

### Jelena Notaros

Thesis in the field of Electrical Engineering and Computer Science: Integrated Optical Phased Arrays: Augmented Reality, LiDAR, and Beyond

### Colm O'Rourke

Thesis in the field of Electrical Engineering and Computer Science: Decentralized Power Systems: Reference-Frame Theory and Stability Region Generation

### Michael Julian Orella

Thesis in the field of Chemical Engineering: Models Across Multiple Length Scales to Advance Biomass Upgrading

### Amy Elizabeth Ousterhout

(September, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Shenango: A System for Achieving High CPU Efficiency and Low Tail Latency in Datacenters

### Wei Ouyang

(February, 2020) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Hierarchical Selective Electrokinetic Concentration: the Universal Next-Generation Biomolecule Enrichment Technique for Molecular Diagnostics

### Juan Felipe Oviedo Perhavec

Thesis in the field of Mechanical Engineering: Accelerated Development of Photovoltaics by Physics-Informed Machine Learning

### Justin Michael Paloni

Thesis in the field of Chemical Engineering: Protein-Polymer Conjugate Arrays for Enhanced Biosensor Sensitivity and Selectivity

### Gee hoon Park

(February, 2020) Thesis in the field of Mechanical Engineering: Determining Phosphate Levels in Natural Water Using a Novel Electrochemical Measurement Device

### **Hoyoung Daniel Park**

(September, 2019) Thesis in the field of Chemical Engineering: Ion-exchanged Metal–Organic Frameworks for Industrially Relevant Catalysis Applications

### Yongjin Park

(September, 2019) Thesis in the field of Biological Engineering: Design and Debugging of Ultrastable Engineered Genetic Systems

### John Lee Thompson Peebles, Jr.

(September, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Fast Spectral Primitives for Directed Graphs

### **Cheng Peng**

Thesis in the field of Electrical Engineering and Computer Science: Dynamically Programmable Surfaces for High-Speed Optical Modulation and Detection

### Santiago Nicolas Perez De Rosso (February, 2020)

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Declarative Assembly of Web Applications from Predefined Concepts

### **Rachel Martha Katims Perlman**

Thesis in the field of Engineering Systems: Characterizing the Materials Footprint of a University Campus: Data, Methods, and Recommendations

### Yewen Pu

(September, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Making Fast Informative Queries with Learned Propagations

### David Qiu

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Representation and Transfer Learning Using Information-Theoretic Approximations

### Srinivasan Raghuraman

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Infrastructures for Secure Multiparty Computation

### Ramya Ramakrishnan

(September, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Error Discovery through Human-AI Collaboration

### Antoine Ramier

(September, 2019) Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Optical Coherence Vibrography: A Quantitative Tool for Probing Auditory and Ocular Biomehcanics

### Govind L. Ramnarayan

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Distributed Error Correction and Inference

### Charles Garrett Rappazzo

Thesis in the field of Biological Engineering: Determination of Class II Peptide-MHC Repertoires and Recognition via Large Yeast-Displayed Libraries

### Manan B. Raval

(February, 2020) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Integrated Optical Phased Arrays for Three-Dimensional Display Applications

### Samuel James Raymond

(February, 2020) Thesis in the field of Civil Engineering and Computation submitted to the Department of Civil and Environmental Engineering: Combining Numerical Simulation and Machine Learning -Modeling Coupled Solid and Fluid Mechanics Using Mesh Free Methods

### Ashley Brown Raynal

(September, 2019) Thesis in the field of Mechanical Engineering: A Portable, Ultra-Low Cost NMR Device

### Adrià Recasens Continente

### (February, 2020)

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Learning Through Looking and Listening

### William C. Records

Thesis in the field of Chemical Engineering: Virus-Enabled Design of High-Performing, Three-Dimensional Nanomaterials for Electrochemical Energy Applications

### Arman Rezaee

(February, 2020) Thesis in the field of Electrical Engineering and Computer Science: Towards a Cognitive Network Management and Control System

### Mariana Rodriguez Buno

(February, 2020) Thesis in the field of Computational Sciences and Civil Engineering submitted to the Department of Civil and Environmental Engineering: Modeling Multiphysics of Traveling Wave Reactor Spent Fuel Disposal in Deep Crystalline Host Rock

### Ivo Rosa Montenegro

(February, 2020) Thesis in the field of Geotechnical and Geoenvironmental Engineering submitted to the Department of Civil and Environmental Engineering: Numerical Modeling, Characterization, and Monitoring of the Seasonal Behavior of Expansive Clays

### Jacob Roxon

(February, 2020) Thesis in the field of Civil and Environmental Engineering: Role of City Texture in Identifying Drag Coefficients of Buildings to Prevent Hurricane Damage

### William David Sanchez

Thesis in the field of Aeronautics and Astronautics: Toward Fuel-Efficient Formation Flying of an Observatory and External Occulter at Sun-Earth L2

### Joseph David Sandt

(February, 2020) Thesis in the field of Mechanical Engineering: Light Manipulation with Photonic Fibers and Optical Light Guides: Dynamic Structural Color and Light Distribution in Microalgae Cultures

### **Peter Jeffries Santos**

Thesis in the field of Materials Science and Engineering: Self-Assembling Nanocomposite Tectons for Ordered Superlattices

### Tuhin Sarkar

Thesis in the field of Electrical Engineering and Computer Science: Learning Structure from Unstructured Data

### Luke Robert Schaeffer

(September, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Examining All Possibilities: Classification Theorems and Quantum Computing

### Jennifer Moffitt Schall

(See also M.B.A., Course XV) Thesis in the field of Chemical Engineering Practice submitted to the Department of Chemical Engineering: Growth and Nucleation Kinetics in Continuous Antisolvent Crystallization Systems

### Ian Schneider

(February, 2020) Thesis in the field of Social and Engineering Systems submitted to the Institute for Data, Systems, and Society: Market Design Opportunities for an Evolving Power System

# Adam Benjamin Gelernter Sealfon

(September, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Keep it Secret, Keep it Safe: Privacy, Security and Robustness in an Adversarial World

### Nestor Andres Sepulveda

Thesis in the field of Nuclear Science and Engineering: Decarbonization of Power Systems, Multi-Stage Decision-Making with Policy and Technology Uncertainty

### Sarah Jane Shapiro

(September, 2019) Thesis in the field of Chemical Engineering: Rational Hydrogel Design for Point-of-Care Diagnostics

### Sam James Silva

(September, 2019) Thesis in the field of Environmental Engineering and Computation submitted to the Department of Civil and Environmental Engineering: Investigating the Influence of Biosphere-Atmosphere Interactions on Atmospheric Chemistry and Composition

### Diogo Silva Castilho

(September, 2019) Thesis in the field of Aeronautics and Astronautics: Active Hazard Analysis Integration into Safety Management Systems

### Mohamad Othman Sindi

(September, 2019) Thesis in the field of Computational Science and Engineering submitted to the Department of Civil and Environmental Engineering: A Container-Based Lightweight Fault Tolerance Framework for High Performance Computing Workloads

### André Cornelis Joseph Snoeck

Thesis in the field of Transportation submitted to the Department of Civil and Environmental Engineering: Strategic Last-Mile Distribution Network Design under Demand Uncertainty

### Luis Rubén Soenksen Martínez

(February, 2020) Thesis in the field of Mechanical Engineering: Cell-free Freeze-dried Synthetic Biology for Wearable Biotechnology Applications

### Chuliang Song

Thesis in the field of Civil and Environmental Engineering: An Environment-Dependent Framework to Study Ecological Networks

### Shriya Sruthi Srinivasan

(February, 2020) Thesis in the field of Medical Engineering and Medical Physics submitted to the Harvard-MIT Program in Health Sciences and Technology: Rewiring Neural Conduits: Engineering Neuromuscular Tissues for Bidirectional Neuroprosthetic Interfacing

### Matthew James Staib

Thesis in the field of Electrical Engineering and Computer Science: Learning and Optimization in the Face of Data Perturbations

### **Gregory Joseph Stein**

Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Representations for Intelligent Navigation in Unfamiliar Environments

### Max Andrew Stockslager

Thesis in the field of Mechanical Engineering: Single-Cell Mass Measurements for Drug Susceptibility Testing in Cancer

### **Roman Mark Stolyarov**

(February, 2020) Thesis in the field of Health Sciences and Technology submitted to the Harvard-MIT Program in Health Sciences and Technology: Development and Validation of a Terrain Adaptive Prothesis Control System

# **Daniel DeWitt Strawser**

(September, 2019) Thesis in the field of Mechanical Engineering: Planning Under Uncertainty in Resource-Constrained Systems

### Elise M. Strobach

(February, 2020) Thesis in the field of Mechanical Engineering: Optically Transparent, Thermally Insulating and Soundproofing (OTTIS) Aerogel for High-Efficiency Window Applications

### Cong Su

(February, 2020) Thesis in the field of Nuclear Science and Engineering: Atomic Engineering on 2D Materials Using Electron Irradiation and Chemical Protection

### Peter Xinyang Su

Thesis in the field of Materials Science and Engineering: Lead Chalcogenide Thin Film Materials and Processing for Infrared Photonic Devices

### George Le-Le Sun

(September, 2019) Thesis in the field of Biological Engineering: Engineering Yeast for Heavy Metal Waste Remediation

### Weike Sun

Thesis in the field of Chemical Engineering: Advanced Process Data Analytics

### Yongbin Sun

Thesis in the field of Mechanical Engineering and Computation submitted to the Department of Mechanical Engineering: Enhancing Internet of Things Experience in Augmented Reality Environments

### **Ki-Joo Sung**

Thesis in the field of Chemical Engineering: Engineering Non-Immunoglobulin Binding Proteins for in vitro Diagnostic Tests

### Justin Mark Swaney

(February, 2020) Thesis in the field of Chemical Engineering: Scaling Up 3D Imaging, Analysis, and Culture of Complex Brain Models

### Alvin Thong Lip Tan

(September, 2019) Thesis in the field of Materials Science and Engineering: Direct-Write Assembly of Colloidal Materials

### Scott Howard Tan

Thesis in the field of Mechanical Engineering: Neuromorphic Computing Systems: Crystalline Resistive Random Access Memory

### Omer Tanović

(September, 2019) Thesis in the field of Electrical Engineering and Computer Science: Optimal Nonlinear Digital Signal Processing: A Dynamical Systems Approach

### Jacqueline Leah Thomas

Thesis in the field of Aeronautics and Astronautics: Systems Analysis of Community Noise Impacts of Advanced Flight Procedures for Conventional and Hybrid Electric Aircraft

### Aniwat Tiralap

(February, 2020) Thesis in the field of Mechanical Engineering: Aero-Thermal-Mechanical Interactions in Ultra High-Speed Micro Gas Turbines

### Ioan Alin Tomescu Nicolescu

(February, 2020) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: How to Keep a Secret and Share a Public Key (Using Polynomial Commitments)

### **Emily Anne Toomey**

Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Superconducting Nanowire Electronics for Alternative Computing

### Jessica Jane Tordoff

Thesis in the field of Computational and Systems Biology: Engineering Self-Assembling Living Structures with Mammalian Synthetic Biology

### Ang Andy Tu

Thesis in the field of Biological Engineering: Recovery of T Cell Receptor Variable Sequences from 3' Barcoded Single-Cell RNA Sequencing Libraries

### Vaibhav Vasant Unhelkar

(February, 2020) Thesis in the field of Autonomous Systems submitted to the Department of Aeronautics and Astronautics: Effective Information Sharing for Human-Robot Collaboration

### Ali Vakilian

(September, 2019) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: New Directions in Streaming Algorithms

### Parker Denys Vascik

(February, 2020) Thesis in the field of Aeronautics and Astronautics: Systems Analysis of Urban Air Mobility Operational Scaling

### Deepak Vasisht

(September, 2019) Thesis in the field of Computer Science and Engineering submitted to the Department of Electrical Engineering and Computer Science: Towards Realizing the Internet-of-Things Vision: In-body, Homes, and Farms

### William R. Vega-Brown

(February, 2020) Thesis in the field of Mechanical Engineering: Efficiency and Abstraction in Task and Motion Planning

### Matthew T. Vernacchia

Thesis in the field of Space Propulsion submitted to the Department of Aeronautics and Astronautics: Development of Low-Thrust Solid Rocket Motors for Small, Fast Aircraft Propulsion

### Lisa Rae Volpatti

(February, 2020) Thesis in the field of Chemical Engineering: Development and Evaluation of Glucose-Responsive Biomaterials as Self-Regulated Insulin Delivery Systems

### Sahag Voskian

(September, 2019) Thesis in the field of Chemical Engineering: Electrochemically Mediated Separations and Catalysis

### Andrea Kimi Wallace

Thesis in the field of Biological Engineering: Engineering Diatom Peptides for the Synthesis of Silica Nanomaterials

### Michael P. Walsh

Thesis in the field of Electrical Engineering and Computer Science: Statistical Metrology and Process Control of Quantum Devices

### Zhong Yi Wan

Thesis in the field of Mechanical Engineering and Computation submitted to the Department of Mechanical Engineering: Physics-Constrained Machine Learning Strategies for Turbulent Flows and Bubble Dynamics

### Albert D. Wang

(September, 2019) Thesis in the field of Mechanical Engineering: A Methodology to Quantify Risk of Failure for Dynamic Robots

### Cheng Wang

(February, 2020) Thesis in the field of Electrical Engineering and Computer Science: Terahertz Wave-Molecule Interactions via CMOS Chips: From Comb Gas Sensor with Absolute Specificity to Ultra-Stable, Miniaturized Clock

### Fan Wang

(September, 2019) Thesis in the field of Mechanical Engineering and Computation submitted to the Department of Mechanical Engineering: New Modeling of Compact, High-efficiency, and Widely-tunable Gas-phase Terahertz Lasers

### Miao Wang

(February, 2020) Thesis in the field of Chemical Engineering: Flue Gas CO<sub>2</sub> Capture Using Electrochemically Mediated Amine Regeneration

### Zi Wang

(February, 2020) Thesis in the field of Computer Science submitted to the Department of Electrical Engineering and Computer Science: Robot Learning with Strong Priors

### Ziqiang Wang

(February, 2020) Thesis in the field of Materials Science and Engineering: Lithium Deposition and Stripping in Solid-State Battery via Coble Creep

### Samuel Walter Winslow

Thesis in the field of Chemical Engineering: Lead Sulfide Nanocrystal Ligand Structure and Its Influence on Superlattice Self-Assembly

### Maxim Wolf

(September, 2019) Thesis in the field of Computational and Systems Biology: Extracting Information on Coding Function from Signatures in Gene Sequence and Its Evolutionary History

### Dan Wu

(February, 2020) Thesis in the field of Mechanical Engineering and Computation submitted to the Department of Mechanical Engineering: Microfluidic and Electronic Detection of Protein Biomarkers

### Jiajun Wu

(February, 2020) Thesis in the field of Electrical Engineering and Computer Science: Learning to See the Physical World

### Haofeng Xu

Thesis in the field of Aeronautics and Astronautics: Experiments in Electroaerodynamic Propulsion

### Liangyu Xu

(February, 2020) Thesis in the field of Mechanical Engineering and Computation submitted to the Department of Mechanical Engineering: A Second Generation URANS Approach for Application to Aerodynamic Design and Optimization in the Automotive Industry

## Hongyu Yang

(September, 2019) Thesis in the field of Electrical Engineering and Computer Science: New Interpretable Machine Learning Techniques and an Application to Stroke Prediction in Atrial Fibrillation Patients

### Jing Yang

(February, 2020) Thesis in the field of Materials Science and Engineering: Predictive Modeling of Electronic and Ionic Transport at Electrochemical Interfaces

### Xi Yang

(September, 2019) Thesis in the field of Electrical Engineering and Computer Science: Flash Analog-to-Digital Converters with Time-Based Techniques

### Yi Yang

(September, 2019) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Novel Electromagnetic Scattering Phenomena

### Yujia Yang

(September, 2019) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Nanostructures for Vacuum Optoelectronic Engineering

### Han Yin

(February, 2020) Thesis in the field of Mechanical Engineering: Mechanism and Applications of Large and Persistent Photoconductivity in Cadmium Sulfide

### Chih-Chieh Yu

Thesis in the field of Biological Engineering: Expansion Microscopy of *C. elegans*: Nanoscale Imaging of Biomolecules Throughout an Entire Organism

### Xiangming Yu

(September, 2019) Thesis in the field of Mechanical Engineering and Computation submitted to the Department of Mechanical Engineering: Theoretical and Numerical Study of Air Entrainment and Bubble Size Distribution in Strong Free-surface Turbulent Flow at Large Froude and Weber Number

### Rodger Yuan

(February, 2020) Thesis in the field of Materials Science and Engineering: Manipulating Fluids and Fields in Multimaterial Fibers

### Amy Xian Zhang

(September, 2019) Thesis in the field of Electrical Engineering and Computer Science: Systems for Collective Human Curation of Online Discussion

### Xiang Zhang

(September, 2019) Thesis in the field of Mechanical Engineering: Non-Contact Ultrasound

### Yun Zhang

(September, 2019) Thesis in the field of Engineering Systems: Dynamic and Robust Network Resource Allocation

### Yundi Zhang

(September, 2019) Thesis in the field of Transportation submitted to the Department of Civil and Environmental Engineering: Realtime Personalized Toll Optimization Based on Traffic Predictions

### Lin Zhao

(September, 2019) Thesis in the field of Mechanical Engineering: Radiative Transport in Transparent Aerogels for Solar Thermal Energy Applications

### Xiaoyu Zhao

(February, 2020) Thesis in the field of Electrical Engineering and Computer Science: Learning Distributions of Transformations from Small Datasets for Applied Image Synthesis

### Xingang Zhao

(September, 2019) Thesis in the field of Nuclear Science and Engineering: Prediction of Departure from Nucleate Boiling in Subchannel Applications: from Mechanistic Modeling to Hybrid Framework

### Xijia Zheng

Thesis in the field of Electrical Engineering and Computer Science: Cognitive Optical Network Architecture in Dynamic Environments

### Jiawei Zhou

(September, 2019) Thesis in the field of Mechanical Engineering: Nanoscale Thermal and Thermoelectric Energy Transport in Crystalline and Disordered Materials

### Tianli Zhou

Thesis in the field of Transportation submitted to the Department of Civil and Environmental Engineering: Tackling Car-Sharing Service Design Problems at Scale with High-Resolution Data: Discrete Simulation-Based Optimization Approaches

### Di Zhu

(September, 2019) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Microwave Engineering in Superconducting Nanowires for Single-Photon Detection

### Martín Zubeldía Suárez

(September, 2019) Thesis in the field of Electrical Engineering submitted to the Department of Electrical Engineering and Computer Science: Delay, Stability, and Resource Tradeoffs in Large Distributed Service Systems

# SCHOOL OF HUMANITIES, ARTS, AND SOCIAL SCIENCES, DOCTORAL

### **Doctor of Philosophy**

School of Humanities, Arts, and Social Sciences

### Anca-Patricia Anghel

Thesis in the field of Economics: Three Essays in Economics

### Pablo Daniel Azar

(September, 2019) Thesis in the field of Economics: Essays in Network Economics

### Olivia Anna Kristina Bergman

Thesis in the field of Political Science: Designing Policy Feedback: Experimental Evidence on the Everyday Politics of the Social Contract

### Elissa Matz Berwick

(September, 2019) Thesis in the field of Political Science: Sub-state Nationalism and Social Solidarity: Essays on Spain and the United Kingdom

### **David Alan Builes**

Thesis in the field of Philosophy submitted to the Department of Linguistics and Philosophy: The Empirical Relevance of Metaphysics

### Ashawari Chaudhuri

(September, 2019) Thesis in the field of History, Anthropology, and Science, Technology, and Society submitted to the Program in Science, Technology, and Society: The Kernel of Doubt: Agricultural Biotechnology, Braided Temporalities, and Agrarian Environments in India

### María Loreto Cox Alcaíno

(September, 2019) Thesis in the field of Political Science: Essays on Politics and Education

### Elizabeth Ann Knudson Dekeyser

(September, 2019) Thesis in the field of Political Science and Statistics submitted to the Department of Political Science: Bridging the Divide: Islam and the State in France

### **Mert Demirer**

Thesis in the field of Economics and Statistics: Essays on Production Function Estimation

### Ömer Demirok

(September, 2019) Thesis in the field of Linguistics submitted to the Department of Linguistics and Philosophy: Scope Theory Revisited: Lessons from Piedpiping in *wh*-questions

### **Kevin Matthew Dorst**

(September, 2019) Thesis in the field of Philosophy submitted to the Department of Linguistics and Philosophy: Modest Epistemology

### Naomi Clair Francis

(September, 2019) Thesis in the field of Linguistics submitted to the Department of Linguistics and Philosophy: Presuppositions in Focus

### Michael Raphael Freedman

(September, 2019) Thesis in the field of Political Science: Sacred Politics: Religious Leaders and Conflict in Israel

### Cosmo Douglas Grant

(September, 2019) Thesis in the field of Philosophy submitted to the Department of Linguistics and Philosophy: Foundations and Philosophical Applications of Game Theory

# Colin Travis Gray

(February, 2020) Thesis in the field of Economics: Essays on Social Insurance Program Design

### Jonathon Hazell Thesis in the field of Economics: Essays on Empirical Macroeconomics

**Ryan Reed Hill** Thesis in the field of Economics: Essays on the Economics of Science and

### Nicholas Intscher

Innovation

Thesis in the field of Political Science: The Fragmentation of Political Risk and MNCs' Supply Chain Linkages

### Clare Seungyoon Kim

(September, 2019) Thesis in the field of History, Anthropology, and Science, Technology, and Society submitted to the Program in Science, Technology, and Society: The Subjects of Modernism: Mathematics, Art, and the Politics of Value in Twentieth-Century United States

### **Alison Laurence**

(September, 2019) Thesis in the field of History, Anthropology, and Science, Technology, and Society submitted to the Program in Science, Technology, and Society: Afterlives of Extinction: The Politics of Display in the Modern United States

### Jetson Leder-Luis

Thesis in the field of Economics: The Economics of Fraud and Corruption

### Rose Elizabeth Lenehan

(September, 2019) Thesis in the field of Philosophy submitted to the Department of Linguistics and Philosophy: Reparations, Racial Exploitation, and Racial Capitalism

### Chen Lian

Thesis in the field of Economics: Essays on Behavioral Economics and Macroeconomics

### Nicholas Steven Longenbaugh

(September, 2019) Thesis in the field of Linguistics submitted to the Department of Linguistics and Philosophy: On Expletives and the Agreement/ Movement Correlation

### Philip Andrew Martin

(September, 2019) Thesis in the field of Political Science: Insurgent Armies: Explaining Military Loyalty after Rebel Victory

### **Timothy Patrick McDonnell**

(September, 2019) Thesis in the field of Political Science: The Sources of US Nuclear Posture

### Madeline Dabinett McKelway

Thesis in the field of Economics: Essays on the Empowerment and Employment of Women in India

### Andrew Charles Miller

Thesis in the field of Political Science: The Information Game: Police-Citizen Cooperation in Communities with Criminal Groups

### Juan Mateo Montenegro Zarama

Thesis in the field of Economics: Essays on the Political Economy of Development

### Sophie Moracchini

(September, 2019) Thesis in the field of Linguistics submitted to the Department of Linguistics and Philosophy: Morphosyntax and Semantics of Degree Constructions

### Yaroslav Vadimovich Mukhin

(September, 2019) Thesis in the field of Economics and Statistics: Geometric Methods in Econometrics and Statistics

### Lucas Melvin Müller

(September, 2019) Thesis in the field of History, Anthropology, and Science, Technology, and Society submitted to the Program in Science, Technology, and Society: Toxic Relationships: Health and the Politics of Science and Trade in the Postcolonial World

### **Cullen Gifford Nutt**

(September, 2019) Thesis in the field of Political Science: Sooner is Better: Covert Action to Prevent Realignment

### **Tamar Judith Oostrom**

Thesis in the field of Economics: Essays on Innovation in Health Care Markets

### Peter Gibbs Oviatt

(September, 2019) Thesis in the field of History, Anthropology, and Science, Technology, and Society submitted to the Program in Science, Technology, and Society: Truffle Crops and Soil Drugs: New Fungal Practices and Epistemologies for the 21st Century

### Gustavo Passarelli Giroud Joaquim

Thesis in the field of Economics: Essays in Bank Competition and Credit Policy

### Jonathan Blake Petkun

Thesis in the field of Economics: Essays on the Law and Economics of Public Institutions

### **Milo Phillips-Brown**

(September, 2019) Thesis in the field of Philosophy submitted to the Department of Linguistics and Philosophy: What it Means to Want

### Ignacio Puente

Thesis in the field of Political Science: Incubating (Financial) Development: Private Equity in Latin America

### William Minot Rafey

Thesis in the field of Economics: Essays in Environmental Market Design

### Tesalia Elisa Rizzo Reyes

(February, 2020) Thesis in the field of Political Science: Intermediaries of the State: Bureaucratic Transaction Costs of Claiming Welfare in Mexico

### **Beth Michelle Semel**

(September, 2019) Thesis in the field of History, Anthropology, and Science, Technology, and Society submitted to the Program in Science, Technology, and Society: Speech, Signal, Symptom: Machine Listening and the Remaking of Psychiatric Assessment

### Cory B. Smith

Thesis in the field of Economics: Land Use and Development Over the Long Run

### Mariano Eduardo Spector

Thesis in the field of Economics: Essays on Redistributive Fiscal Policies and Macroeconomics

### **Guillermo Toral Martínez**

Thesis in the field of Political Science: The Political Logics of Patronage: Uses and Abuses of Government Jobs in Brazil

### Clara Vandeweerdt

Thesis in the field of Political Science: Identities and Issue Opinions: Learning from Climate Change

### Patrick Quinn White

(September, 2019) Thesis in the field of Philosophy submitted to the Department of Linguistics and Philosophy: Love First

### Nathan Gaspar Zorzi

Thesis in the field of Economics: Essays on Uninsured Income Risk, Lumpy Investment and Aggregate Demand

# SLOAN SCHOOL OF MANAGEMENT, DOCTORAL

### **Doctor of Philosophy**

Sloan School of Management

### Inna Abramova

Thesis in the field of Management: Labor Constraints and Accounting Firm Mergers

### **Michael Francis Beeler**

(September, 2019) Thesis in the field of Operations Research: Inference and Decision Models for Regulatory and Business Challenges in Low-Income Countries

### Lauren Elizabeth Berk

Thesis in the field of Operations Research: New Optimization Approaches to Matrix Factorization Problems with Connections to Natural Language Processing

### Max Ray Biggs

(September, 2019) Thesis in the field of Operations Research: Prescriptive Analytics in Operations Problems: A Tree Ensemble Approach

### **Brittany Marie Bond**

Thesis in the field of Management: Status Recognition and its Consequences for Top-Talent Mobility and Productivity

### Louis Lester Chen

(September, 2019) Thesis in the field of Operations Research: Distributionally Robust Optimization with Marginals: Theory and Applications

### **Avinash Collis**

Thesis in the field of Management: How Should We Measure the Digital Economy?

### Valère Renaud Ernst Fourel

(February, 2020) Thesis in the field of Management: Essays in Empirical Finance

### Caroline Viola Fry

Thesis in the field of Management: The Very Invisible College: Global Science and African Participation

### Julia Gaudio

Thesis in the field of Operations Research: Investigations in Applied Probability and High-Dimensional Statistics

### William W. Goulding

(September, 2019) Thesis in the field of Management: Essays in Financial Economics

### **Rim Hariss**

(September, 2019) Thesis in the field of Operations Research: Data-driven Optimization with Behavioral Considerations: Applications to Pricing

### Michael Hu

(February, 2020) Thesis in the field of Operations Research: Leveraging Data Analytics to Improve Outpatient Healthcare Operations

### **David Scott Hunter**

(February, 2020) Thesis in the field of Operations Research: New Approaches to Maximizing Influence in Large-Scale Social Networks

### Michael Joseph Kearney

(September, 2019) Thesis in the field of Management: Essays on Managing Innovation

### J. Daniel Kim

(February, 2020) Thesis in the field of Management: Entrepreneurial Organizations and Human Capital

### Fangzhou Lu

Thesis in the field of Management: Essays in Financial Economics

### Jing Lu

(February, 2020) Thesis in the field of Operations Research: Probabilistic Models and Optimization Algorithms for Large-scale Transportation Problems

### **Maarten Meeuwis**

Thesis in the field of Management: Essays in Financial Economics

### Milashini Nambiar

(September, 2019) Thesis in the field of Operations Research: Data-driven Pricing and Inventory Management with Applications in Fashion Retail

### Suzie Noh

Thesis in the field of Management: The Effect of Financial Reporting on Strategic Investments: Evidence from Purchase Obligations

### Jean Pauphilet

Thesis in the field of Operations Research: Algorithmic Advancements in Discrete Optimization - Applications to Machine Learning and Healthcare Operations

### William Powley

(February, 2020) Thesis in the field of Management: Other Litigation: A New Measure of Ex Ante Litigation Risk

### James Whitcomb Riley

Thesis in the field of Management: Social Exchange and Valuations in the Market for Contemporary Art

### **Bradley Eli Sturt**

Thesis in the field of Operations Research: Dynamic Optimization in the Age of Big Data

### Jesse Michael Wahlen

Thesis in the field of Management: Essays on the Evaluation of Novel Ideas

### Yuchen Wang

Thesis in the field of Operations Research: Interpretable Machine Learning Methods with Applications to Health Care

### Julia Yun Chien Yan

Thesis in the field of Operations Research: From Data to Decisions in Urban Transit and Logistics

### Duanyi Yang

Thesis in the field of Management: Essays on Workplace Practices in Different Institutional Settings Ilias Zadik (September, 2019) Thesis in the field of Operations Research: Computational and Statistical Challenges in High Dimensional Statistical Models

# SCHOOL OF SCIENCE, DOCTORAL

### **Doctor of Science**

School of Science

### Spencer Nicholas Gaelan Axani

(February, 2020) Thesis in the field of Physics: Sterile Neutrino Searches at the IceCube Neutrino Observatory

Doctor of Philosophy

School of Science

# **Clare Isabel Abreu**

Thesis in the field of Physics: Environmental Modulation of Microbial Communities

### Danielle Aduke Adekunle

Thesis in the field of Biology: Transcriptome-Wide Organization of Subcellular Microenvironments Revealed by ATLAS-Seq

### Andrew Jeehyun Ahn

Thesis in the field of Mathematics: The Method of Moments in Convolved Random Matrix Models and Discrete Analogues

### Mohammad Murshid Alam

(February, 2020) Thesis in the field of Chemistry submitted to the Department of Chemistry: Immune Modulation by Synthetic Multivalent Antigens

### Nicole Ann Aponte Santiago

Thesis in the field of Biology: Functional Changes in Connectivity Induced by Differential Manipulations of Activity in Drosophila Tonic Versus Phasic Motoneurons

### Vishal Arul

Thesis in the field of Mathematics: Explicit Division and Torsion Points on Superelliptic Curves and Jacobians

### **Emir Enrique Aviles Pagan**

Thesis in the field of Developmental Biology submitted to the Department of Biology: Regulators of the Drosophila Oocyte-to-Embryo Transition

### **Timothy James Barnum**

(February, 2020) Thesis in the field of Chemistry submitted to the Department of Chemistry: Spectroscopy and Dynamics of High Orbital Angular Momentum Rydberg States

### Samuel Garrett Bartko

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Synthesis of Pyridines and Azaindoles via Diels-Alder Reactions of Tosyl Cyanide with Vinyl- and Heteroarylallenes

### **Tristan Andrew Bell**

(February, 2020) Thesis in the field of Biology: Intersubunit Communication and Coordinated Mechanical Activity in the AAA+ Protease ClpXP

### John Brooks Biersteker

(September, 2019) Thesis in the field of Planetary Sciences submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Planet Formation and Evolution in our Solar System and Beyond

### Pablo Boixeda Alvarez

Thesis in the field of Mathematics: Affine Springer Fibers and the Representation Theory of Small Quantum Groups and Related Algebras

### **Djenet Bousbaine**

(February, 2020) Thesis in the field of Microbiology submitted to the Department of Biology: Commensal-Specific Immune Responses At The Intestinal Mucosa

### Stephanie Akemi Brandt

Thesis in the field of Physics: Measurement of W and Z Boson Production Cross Sections in Proton-Proton Collisions at  $\sqrt{s}=5.02$  TeV and  $\sqrt{s}=13$  TeV

### Christopher M. Brennan

(September, 2019) Thesis in the field of Biology: Aneuploidy Reveals Insights into Control of Protein Complex Stoichiometry

### Sarah Jean Bricault

(February, 2020) Thesis in the field of Neurobiology submitted to the Department of Biology: Investigating Brain-wide Neural Mechanisms Using fMRI and Novel Tools

# Daniel Briskin

(February, 2020) Thesis in the field of Molecular Biology submitted to the Department of Biology: The Biochemical Basis for the Cooperative Action of MicroRNAs

### Aaron William Buikema

(February, 2020) Thesis in the field of Physics: High-Power Operation of Interferometric Gravitational-Wave Detectors

### **Robert Hood Chatham IV**

Thesis in the field of Mathematics: An Orientation Map for Height p-1 Real E Theory

### Atticus Ballman Christensen

Thesis in the field of Mathematics: A Topology on Points on Stacks

### Nathaniel David Chu

(September, 2019) Thesis in the field of Microbiology submitted to the Department of Biology: Translating Dynamics of Humanmicrobe Interactions

### Jennifer K. Cloutier

Thesis in the field of Developmental Biology submitted to the Department of Biology: Activin Signaling Controls a Wound-Induced Program Essential for Regenerative Patterning

### Steven Eli Cohen

Thesis in the field of Chemistry submitted to the Department of Chemistry: Multienzyme Assemblies and Dynamics in Acetogenesis and Methanogenesis

### Max Collinet

(February, 2020) Thesis in the field of Geology submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Experimental and Analytical Studies of Partial Melting in Planetesimals and the Martian Mantle

### Julian Colton Cooper

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Novel Metal- and Main Group-Catalyzed Methods for Modulating Molecular Oxygenation

### Miles Meissner Paasikivi Couchman

Thesis in the field of Mathematics: The Stability of Bound States in Pilot-Wave Hydrodynamics

### Ian Thomas Hunt Counts

Thesis in the field of Physics: Surface Friction and Spectroscopic Probes of New Physics with Trapped Ions

### **Reynier Cruz Torres**

Thesis in the field of Physics: Two-Nucleon Short-Range Correlations in Light Nuclei

### Peter Holmes Culviner

(September, 2019) Thesis in the field of Computational and Systems Biology submitted to the Department of Biology: Endoribonuclease Toxin-antitoxin Systems in Bacteria: Targets and Growth Inhibition

### Zhehao Dai

Thesis in the field of Physics: Exploring Strongly Interacting Gapless States: Cuprates, Pair Density Waves, and Fluctuating Superconductivity

### Simona Dalin

(February, 2020) Thesis in the field of Biology: Cell-Intrinsic and Cell-Extrinsic Resistance to Classical Chemotherapies

### Kathleen Patricia Davis

(September, 2019) Thesis in the field of Biology: Specificity and Benefits of an Exclusion Mechanism for a Mobile Genetic Element in *Bacillus subtilis* 

### **Christopher Daniel Dawson**

Thesis in the field of Biology: Structural Characterization of Glycyl Radical Enzymes in the Human Gut Microbiome

### Nicholas Andrew DeLateur

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Engineering LuxR-type Quorum Sensing Proteins for New Functions

### Joseph Michael Dennis, Jr.

(February, 2020) Thesis in the field of Chemistry submitted to the Department of Chemistry: Palladium- and Nickel-Catalyzed C–N Cross-Coupling Reactions Featuring Soluble Organic Bases

### Ivana Ljubomirova Dimitrova

(February, 2020) Thesis in the field of Physics: Realizing Quantum Spin Models with Li 7 Atoms in an Optical Lattice

### Amro Hani Ali Dodin

Thesis in the field of Chemistry submitted to the Department of Chemistry: Transport and Fluctuations at the Nanoscale

### Natalia C. Drosu

(February, 2020) Thesis in the field of Biology: Understanding the Mechanism of Anti-Retroviral Nucleoside Analogs as Inhibitors of Epstein-Barr Virus Lytic DNA Replication

## Yiheng Duan

(February, 2020) Thesis in the field of Physics: Enhanced Light-Atom Interaction in an Optical Resonator

### **Ryan Andrew Duncan**

Thesis in the field of Chemistry submitted to the Department of Chemistry: Mechanical Properties of Complex Solids and Exotic Thermal Transport Dynamics Investigated with Optical and Extreme-Ultraviolet Transient Grating Techniques

### Kaitlyn Anne Dwelle

Thesis in the field of Chemistry submitted to the Department of Chemistry: Understanding Electrochemistry at the Molecular Scale: Molecular Dynamics Methods and Applications

### Timothy Jonas Eisen

Thesis in the field of Biology: Form and Function of Poly(A) Tails

### Matthew Ryan Elkins

(February, 2020) Thesis in the field of Chemistry submitted to the Department of Chemistry: Protein-Ligand Binding by Solid-State NMR: Cholesterol Interactions in Membranes and with the Influenza A M2 Protein

### **Trevor John Erickson**

Thesis in the field of Chemistry submitted to the Department of Chemistry: Laser Spectroscopy of Acetylene

### Martin Jin-teng Falk

(February, 2020) Thesis in the field of Physics: Self-Assembly of Biological Heteropolymers

### Manuel A. Florez Torres

(September, 2019) Thesis in the field of Geophysics submitted to the Department of Earth, Atmospheric, and Planetary Sciences: A Global Study of Double Seismic Zones and Its Implications for the Mechanism of Intermediate-Depth Earthquakes

### **Caitlin Marie Niesen Friend**

Thesis in the field of Molecular Biology submitted to the Department of Biology: The Roles of the Helicase Double-Hexamer Complex and the SSB Protein RPA during Eukaryotic DNA Replication

### Michael Baily Geeson

Thesis in the field of Chemistry submitted to the Department of Chemistry: New Reactions and Reagents for Phosphorus-Carbon Bond-Formation

### Alex S. Genshaft

Thesis in the field of Chemistry submitted to the Department of Chemistry: Methods to Interrogate Cells and Their Interactions with Single-Cell Resolution

### Matthew Aaron Getz

(September, 2019) Thesis in the field of Biology: Characterization of the Roles of Xrn1p in Small-RNA–Mediated Gene-Silencing Pathways

### Alexander Kamitsuka Godfrey

Thesis in the field of Genetics submitted to the Department of Biology: A Quantitative View of Y-Chromosome Gene Expression across the Human Body

### David C. Goldfinger

(February, 2020) Thesis in the field of Physics: X-ray Searches for Decaying Sterile Neutrinos with the Micro-X and XQC Sounding Rockets

### **Eva Marie Golos**

Thesis in the field of Geophysics submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Imaging and Interpreting Seismic Heterogeneity in the North American Lithosphere

### Allena Mistral Goren

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Structural and Functional Studies of Heme Binding Proteins Toward the Understanding of Malaria

### **Ricardo Grande Izquierdo**

Thesis in the field of Mathematics: The Role of Smoothing Effect in Some Dispersive Equations

### Michael William Gribble, Jr.

Thesis in the field of Chemistry submitted to the Department of Chemistry: New Fundamental Transformations of Heterocyclic Compounds Enabled by Copper Catalysis

### Xueying Guo

(February, 2020) Thesis in the field of Physics: Statistical

Analyses of Exoplanetary Systems and Individual Studies of the Atmospheres of Two Sub-Neptune-Sized Planets

### Mukund Gupta

Thesis in the field of Climate Science submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Climate System Response to Perturbations: Role of Ocean and Sea Ice

### Eric Calvin Hansen

(February, 2020) Thesis in the field of Chemistry submitted to the Department of Chemistry: Low-Toxicity, Earth-Abundant Nanomaterials for Photoluminescence or Magnetic Resonance

### Renin Hazan

Thesis in the field of Biology: Investigating the Cytoplasmic Role of E2F4 in Multiciliogenesis

### Campbell Lucas Hewett

Thesis in the field of Mathematics: Computability of Rational Points on Curves over Function Fields in Characteristic p

### Dylan George Hsu

(September, 2019) Thesis in the field of Physics: \*\*Precision Measurements of and Search for Dark Matter in the Transverse Momentum Spectra of Z Bosons

### Yu-Chien Huang

(September, 2019) Thesis in the field of Physics: Elliptic Fibrations among Toric Hypersurface Calabi-Yau and Mirror Symmetry of Fibrations

### Ethan Yale Jaffe

Thesis in the field of Mathematics: Asymptotic Description of the Formation of Black Holes from Short-Pulse Data

### Vishesh Jain

Thesis in the field of Mathematics: Quantitative Invertibility of Random Matrices: a Combinatorial Perspective

### Cassie Marie Jarvis

(February, 2020) Thesis in the field of Chemistry submitted to the Department of Chemistry: Polymeric Antigens as Targeted Probes of Immunity

### Li Jing

(February, 2020) Thesis in the field of Physics: Physical Symmetry Enhanced Neural Networks

### Joshua Mark Jones

Thesis in the field of Microbiology submitted to the Department of Biology: Effects of the Mobile Genetic Element ICEBs1 on Bacterial Host Fitness

### Rohan Jonnalagadda

Thesis in the field of Biochemistry submitted to the Department of Biology: Structural and Functional Investigations of Mechanisms of Iron-Utilizing Enzymes

### Yoon Jung

Thesis in the field of Physics: Inferring System Properties from Thermodynamic Fluctuations: A Tool Development Approach

### Alexander Mark Justen

(February, 2020) Thesis in the field of Chemistry submitted to the Department of Chemistry: Galactofuranose in Mycobacteria and Nematodes

### **Borys Kadets**

Thesis in the field of Mathematics: Arboreal Representations, Sectional Monodromy Groups, and Abelian Varieties over Finite Fields

### Gyunghoon Kang

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Structural Investigations of Class Ia Ribonucleotide Reductases by Electron Microscopy

### Samuel Weisgurt Kazer

Thesis in the field of Chemistry submitted to the Department of Chemistry: Transcribing the Dynamic Multicellular Immune Orchestra during Acute HIV Infection

### **Rebecca Soyoung Kim**

Thesis in the field of Chemistry submitted to the Department of Chemistry: Methane Mono-Oxidation Electrocatalysis by Palladium and Platinum Salts

### Clint Shijun Ko

(February, 2020) Thesis in the field of Biology: The Spatial Organization of the Microtubule Cytoskeleton and Cell Divisions Promotes Tissue Morphogenesis

### Vladyslav Kozii

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### Dmitrii Kubrak

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### Jean-Benoît Lalanne

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# Christopher Albert Leppla

(September, 2019) Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Associative Learning in Auditory Thalamus and Amygdala

### Amir Levy

(February, 2020) Thesis in the field of Physics: Beyond Poisson-Boltzmann: Strong Correlations and Extreme Confinement in Ionic Fluids

### Cyprian Krzysztof Lewandowski

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### Zhenkun Li

Thesis in the field of Mathematics: Contributions to Sutured Monopole and Sutured Instanton Floer Homology Theories

### Megan Jeramaz Lickley

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### **Richard Yifan Liu**

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Organic Reactions Catalyzed by Copper(I) Hydride Complexes

### William David Lunden

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(February, 2020) Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: The Distinct Neural Mechanisms Underlying the Production of Stereotyped and Exploratory Vocal Behavior in Songbirds

### Tzuhsuan Ma

(February, 2020) Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Towards a Theory for the Emergence of Grid and Place Cell Codes

### Svetlana Makarova

Thesis in the field of Mathematics: Strange Duality on Elliptic and K3 Surfaces

# Jonathan Matthew Malmaud

(February, 2020) Thesis in the field of Cognitive Science submitted to the Department of Brain and Cognitive Sciences: Enriching Models of Natural Language with Auxiliary Data

### John Colonnese Manteiga

(February, 2020) Thesis in the field of Biology: Enhancers and Phase Separation in the Control of Gene Expression

### Lucas David Mason-Brown

Thesis in the field of Mathematics: Unipotent Representations of Real Reductive Groups

### Jared Thomas Mattos

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Advancements in the Synthesis of Distorted Tricoordinate Phosphorus Compounds and Their Use as Platforms in Reductive Chemistries.

### Gina Danielle Mawla

Thesis in the field of Biology: Functions of Alternative ClpP Subunits in Pseudomonas Aeruginosa

### Conor James McClune

(September, 2019) Thesis in the field of Computational and Systems Biology submitted to the Department of Biology: Engineering Orthogonal Signaling Pathways to Probe Sequence Space Capacity

### **Christopher Francis McGinn**

(September, 2019) Thesis in the field of Physics: Mapping the Redistribution of Jet Energy in PbPb Collisions at the LHC with CMS

### **Gweneth Anne McKinley**

Thesis in the field of Mathematics: Probabilistic and Extremal Behavior in Graphs and Matrices

### Pearson Whitehead Miller

Thesis in the field of Physics: Pattern Formation on Active Chemo-Mechanical Surfaces

### Nicole Susanne Moody

Thesis in the field of Chemistry submitted to the Department of Chemistry: Assessing and Improving the Regulatory Compliance and End-of-Life Environmental Impacts of Lead-Based Thin-Film Photovoltaics

### Kelsey R. Moore

Thesis in the field of Geobiology submitted to the Department of Earth, Atmospheric and Planetary Sciences: Cyanobacterial Evolution and Interactions with the Proterozoic World

### Isaak Elis Müller

Thesis in the field of Microbiology submitted to the Department of Biology: Engineering Probiotic Microbes for In Vivo Applications

### Marvin Eduarte Nayan

(February, 2020) Thesis in the field of Neurobiology submitted to the Department of Biology: Local Regulation of Experience-Dependent Synaptic Plasticity by the Noncoding Exonic Circular RNA circHomer1

### Jennifer Kim Thu Nguyen

(February, 2020) Thesis in the field of Microbiology submitted to the Department of Biology: Rapid Nutrient Fluctuations and Their Implications for Bacterial Growth

### Thao Huong Nguyen

(September, 2019) Thesis in the field of Biology: Alternatively Spliced Isoforms of Fibronectin, Tenascin-R and Other Potential Players in Early Vasculogenesis

### Sarah Ann Nordeen

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### **Chase Robert Olsson**

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### Tudor Gabriel Padurariu

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### Louis John Papa III

(February, 2020) Thesis in the field of Chemistry submitted to the Department of Chemistry: New Strategies for *In Vivo* Continuous Directed Evolution

### Jaeseok Park

(September, 2019) Thesis in the field of Neurobiology submitted to the Department of Biology: Genetic Analysis of cGMP-Dependent Chemosensory Signal Transduction Pathways in the Detection of Bacterial Metabolites by C. elegans

### Jiewon Park

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### Joshua William Pfeffer

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### Pyae Phyo

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### Sanjay M. Prakadan

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### Mónica Cristina Quiñones-Frías

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### Amelie A. Raz

Thesis in the field of Biology: Choices in Regeneration: Position and Fate

### **Michael Douglas Reed**

(February, 2020) Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: The Role of IL-17a in the Rescue of ASD-like Behavioral Phenotypes Following Immune Stimulation in a Mouse Model of Neurodevelopmental Disorders

### Christopher E. R. Richardson

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Approaches to Study Zn(II) Deficiency and Transport in Biology

### Nathan Darrell Peterson Ricke

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Development of Electronic Structure and Kinetics Methods for the Rational Design of Electrocatalysts

### Mary Grace Russell

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Expansion of the Technology and Techniques of Continuous Flow Synthesis

### Christopher Jonathan Ryba

Thesis in the field of Mathematics: Stable Characters for Symmetric Groups and Wreath Products

### Steven Robert Sando

(February, 2020) Thesis in the field of Neurobiology submitted to the Department of Biology: Molecular, Cellular, and Circuit Analysis of *C. elegans* Spitting Behavior

### **Emma Louise Sedivy**

Thesis in the field of Biology: Regulation of DnaA as a transcription factor by modulation of cooperative binding, and by arrA, an antisense RNA

### Hyowon Seo

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Photoredox Activation of Carbon Dioxide and Unactivated Aliphatic Carbonyl Compounds

### Huitao Shen

Thesis in the field of Physics: Nonstandard Approaches to Electronic Responses in Solids

### **Ryan Spencer Shinabery**

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Palladium Catalyzed Cross-Coupling of Esters and Amides

### Oles Shtanko

(September, 2019) Thesis in the field of Physics: Boundaries, Disorder and Noise in Quantum-Coherent Systems

### **Boris Shteynas**

(September, 2019) Thesis in the field of Physics: Spin-Orbit Coupled Bose Gases

### Katherine Emily Shulenberger

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Confinement Effects on Multiexciton Dynamics in Semiconductor Nanocrystals

### Yuelin Song

Thesis in the field of Molecular Biology submitted to the Department of Biology: Dynamic Regulation and Functions of Locus-Specific DNA Methylation

### Amanda Walcott Stubbs

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: Oxygen Atom Transfer with Manganese–Exchanged Metal–Organic Frameworks

### Yang Su

Thesis in the field of Biology: The Mitochondria Activates Macrophage Anabolic Responses Through Respiratory Chain Disassembly

### Ao Sun

Thesis in the field of Mathematics: Singular Behaviour and Long Time Behaviour of Mean Curvature Flow

### Chen Sun

Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: How Hippocampus Uses Discrete Neural Codes to Represent Space and Time

### Xiaochen Sun

Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Identifying Functionally Distinct Neuronal Ensembles within the Memory Engram

### Zenna Tavares

(February, 2020) Thesis in the field of Cognitive Science and Statistics submitted to the Department of Brain and Cognitive Sciences: Imaginative Reasoning in Probabilistic Programs

### Ashley Lynn Tong

(September, 2019) Thesis in the field of Chemistry submitted to the Department of Chemistry: A Comparative Look at Structure-Function Roles in Energy Transfer Dynamics of Light-Harvesting Complexes in Purple Bacteria

### Brandon Vanhuy Tran

Thesis in the field of Mathematics: Building and Using Robust Representations in Image Classification

### Suan Lian Tuang

(February, 2020) Thesis in the field of Chemistry submitted to the Department of Chemistry: Development of a Reactive Peptide Sequence for Site-Selective Bioconjugations

### Sam Edward Turton

Thesis in the field of Mathematics: Theoretical Modeling of Pilot-Wave Hydrodynamics

### Marc Havens Wadsworth II

Thesis in the field of Chemistry submitted to the Department of Chemistry: From Benchtop to Bedside and Beyond: The Development and Application of Low- and High-Throughput, Single-Cell RNA-Seq Platforms for Precision Medicine Pipelines

### Benjamin Waldman

Thesis in the field of Microbiology submitted to the Department of Biology: Identification of a Master Regulator of Differentiation in *Toxoplasma gondii* 

### Jake Lee Wellens

Thesis in the field of Mathematics: Assorted Results in Boolean Function Complexity, Uniform Sampling and Clique Partitions of Graphs

### Spencer Sai Git Wong

(September, 2019)

Thesis in the field of Molecular Biology submitted to the Department of Biology: Genetic and Metabolomic Analysis of how Population Density Modulates Neuroendocrine Physiology of C. elegans

### Tailin Wu

(February, 2020) Thesis in the field of Physics: Intelligence, Physics and Information the Tradeoff Between Accuracy and Simplicity in Machine Learning

### Lilia Shell Xie

Thesis in the field of Chemistry submitted to the Department of Chemistry: Through-Bond and Through-Space Charge Transport in Metal-Organic Frameworks

### Haoran Xu

Thesis in the field of Physics: Experimental Studies of Internal Dark Currents in High Gradient Accelerator Structures at 17 GHz

### Zoe Ziyue Yan

Thesis in the field of Physics: From Strongly Interacting Bose-Fermi Mixtures to Ultracold Dipolar Molecules

### Hong-Zhou Ye

Thesis in the field of Chemistry submitted to the Department of Chemistry: Methods For The Electronic Structure Of Large Chemical Systems

### Jason Jungwan Yoo

Thesis in the field of Chemistry submitted to the Department of Chemistry: Developing Highly Efficient Lead Halide Perovskite Solar Cells

### Xiaoqian Yu

(September, 2019) Thesis in the field of Computational and Systems Biology submitted to the Department of Biology: The Assembly and Functions of Microbial Communities on Complex Substrates

### Allen Lambert Yuan

Thesis in the field of Mathematics: On the Higher Frobenius

### Guangyi Yue

Thesis in the field of Mathematics: Combinatorics of Affine Springer Fibers and Combinatorial Wall-Crossing

### Alicia Viridiana Zamudio Montes de Oca

(February, 2020) Thesis in the field of Biology: Insights into Gene Regulation by Genome Structure, Phase Separation and Developmental Signaling

### Hong Zhang

(February, 2020) Thesis in the field of Chemistry submitted to the Department of Chemistry: Palladium-Catalyzed Carbon–Oxygen Bond Formation

### Xiangyu Zhang

Thesis in the field of Neuroscience submitted to the Department of Brain and Cognitive Sciences: Valence Encoding and Memory in the Amygdala

### Yahui Zhang

(September, 2019) Thesis in the field of Physics: Bridging Hubbard Model Physics and Quantum Hall Physics in Graphene Moire Superlattices

### Julia Zhao

Thesis in the field of Chemistry submitted to the Department of Chemistry: Design and Application of Polymer Metal-Organic Cage Gels

### Tingtao Zhou

(September, 2019) Thesis in the field of Physics: Phase Transition Induced Deformation in Porous Media

# AWARDED JOINTLY WITH THE WOODS HOLE OCEANOGRAPHIC INSTITUTION, DOCTORAL

### **Doctor of Philosophy**

### James Francis Bramante

(February, 2020)

Thesis in the field of Marine Geology submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Wave-Driven Geomorphology of Pacific Carbonate Coastlines: From Landscape to Wavelength Scale

### Katherine Amelia Castagno

(September, 2019) Thesis in the field of Marine Geology submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Storm Signatures in Coastal Ponds and Marshes over the Late Holocene

### **Christine Yifeng Chen**

(February, 2020) Thesis in the field of Geology submitted to the Department of Earth, Atmospheric, and Planetary Sciences: U-Th Dating of Lacustrine Carbonates

### William Bryce Corlett

(September, 2019) Thesis in the field of Physical Oceanography submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Dynamics and Kinematics of an Estuarine Network

### Noelle Adriana Held

(February, 2020) Thesis in the field of Chemical Oceanography and Microbial Biogeochemistry submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Protein Regulation in Trichodesmium and Other Marine Bacteria: Observational and Interpretive Biomarkers of Biogeochemical Processes

### Julie Kathryn Jakoboski

(September, 2019) Thesis in the field of Physical Oceanography submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Equatorial Ocean Dynamics Impacting Upwelling West of Galápagos Archipelago

### Meghan R. Jones

(September, 2019) Geological Oceanography: Geophysical and Geochemical Constraints on Submarine Volcanic Processes

### Bryan Edward Kaiser

(February, 2020) Thesis in the field of Physical Oceanography submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Finescale Abyssal Turbulence: Sources and Modeling

# Christopher William Kinsley

(September, 2019) Thesis in the field of Geochemistry submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Reconstructing Atmospheric Changes in Monsoon Regions Using Eolian Dust

### Hannah Friendly Mark

(September, 2019) Thesis in the field of Marine Geophysics submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Seismic and Numerical Constraints on the Formation and Evolution of Oceanic Lithosphere

### Matthew B. Osman

(September, 2019) Thesis in the field of Climate Science submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Greenlandic Ice Archives of North Atlantic Common Era Climate

### Deepa Rao

Thesis in the field of Biological Oceanography submitted to the Department of Earth, Atmospheric, and Planetary Sciences: Characterizing Cobalamin Cycling by Antarctic Marine Microbes Across Multiple Scales

### Nicholas R. Rypkema

(September, 2019) Thesis in the field of Electrical and Oceanographic Engineering submitted to the Department of Electrical Engineering and Computer Science: Underwater & Out of Sight: Towards Ubiquity in Underwater Robotics

### Kevin Michael Sutherland

(February, 2020) Thesis in the field of Chemical Oceanography and Biogeochemistry submitted to the Department of Earth, Atmospheric, and Planetary Sciences: New Insights into the Marine Oxygen Cycle from Manganese Oxide Minerals and Reactive Oxygen Species

### Pedro Nuno Vaz Teixeira

(September, 2019) Thesis in the field of Mechanical and Oceanographic Engineering submitted to the Department of Mechanical Engineering: Dense, Sonar-based Reconstruction of Underwater Scenes

### Laura Grace Weber

(February, 2020) Thesis in the field of Biological Oceanography submitted to the Department of Biology: Characterizing the Ecology of Coral Reef Microorganisms Across Different Scales within the Caribbean

### **Casey James Zakroff**

(September, 2019) Thesis in the field of Biological Oceanography submitted to the Department of Biology: Physiological and Behavioral Responses, and Their Variability, in Squid, *Doryteuthis Pealeii*, Embryos and Paralarvae Reared Under Chronic Ocean Acidification

# MILITARY COMMISSIONS

# **United States Air Force**

Second Lieutenant Karen Camacho Andrew Griese Matthew Hutchinson Ian Palmer Thomas Rick Arman Talkar

# **United States Army**

Second Lieutenant Henry Hanlon Cole Legg Wilbur Li Steve Salvas Rishi Shah Rex Stockham Robert Upton

# **United States Space Force**

Second Lieutenant Jay Laone The first MIT student to be commissioned in the United States Space Force

# **United States Navy**

*Ensign* Kevin Carlson Devon Goetz Colt Hermesch Jonathan Ledet Warner McGhee Thomas Strei III

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